



Design with the other 90%: Cumulus Johannesburg Conference Proceedings



Chief-editors

Amanda Breytenbach
Kathryn Pope

Co-editors

Prof Desmond Laubscher
Prof Federico Freschi
Prof Luisa Collina

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Design with the Other 90% - Cumulus Johannesburg Conference Proceedings

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Cumulus Association contact details

Eija Salmi
Secretary General
Cumulus Association
eija.salmi@aalto.fi

CONFERENCE OVERVIEW AND PUBLICATION OF THE PROCEEDINGS

In 2007, the Smithsonian's Cooper-Hewitt National Design Museum hosted an exhibition entitled 'Design for the other 90%' which focused on design solutions that addressed the most basic needs of the 90% of the world's population not traditionally served by professional designers. In 2008, Cumulus members signed the Kyoto Declaration, wherein they committed themselves to the ideals of sustainable development. In response to the 2007 exhibition and the Cumulus Kyoto declaration, Greenside Design Center and the Faculty of Art, Design and Architecture developed the conference theme of the Cumulus Johannesburg Conference, 'Design with the other 90%: Changing the world by design'. The conference took place from 22- 24 September 2014 in Johannesburg and was the first Cumulus conference hosted in Africa. The conference theme therefore aimed to explore and facilitate discussion around the role art and design can and should play in sustainable social advancement, particularly in the context of the African Continent.

The conference catered for three subthemes. The Respect and Responsibility subtheme explored the social responsibilities of designers in their engagements with communities in a variety of social, cultural and political contexts. Issues of collaborative, participatory and multidisciplinary design were foregrounded. The second subtheme, Socially Responsible Design Education highlighted the importance, as well of challenges, of design education in furthering sustainable and socially responsible design. The Sustainability subtheme focused attention on the economic and environmental aspects of sustainable design.



Cumulus Johannesburg Conference Exhibition: Design with the other 90%

A conference review process took place after the submission of both abstracts and full papers. A call for abstracts was distributed through the Cumulus network resulting in the submission of 149 abstracts. Each abstract was reviewed through employing a double-blind peer review process and a final evaluation by the conference review committee. The double-blind review process ensured that both authors and reviewers remained anonymous during the peer review process. A total of 117 abstracts were selected for submission of full papers, from which 82 full papers were submitted.

Full papers were submitted for peer review after successful acceptance of a conference abstract. Papers adhered to the conference format and addressed the conference themes, sub-themes and conference focus areas. Expert specialists within the field of Art, Design and Architecture were selected to perform double-blind reviews with the review reports being evaluated by the conference

review committee. A list of the peer reviewers is included in the Conference Proceedings. This peer review process took place prior to both the verbal presentation at the conference and the publication of the Conference Proceedings. Authors received feedback in the form of a peer review report. Papers that scored a rating of 3 and 4 in the review report (rating scale of 1-4) are included in the proceedings.

Whilst the committee accepted 54 papers for publication, only 51 were presented at the conference and are thus included in the proceedings. The 51 paper presentations represented 33 institutions across 19 countries. Combined with the delegates attending the conference, the conference succeeded in bringing together 178 individuals from 34 institutions across 74 countries.



Amanda Breytenbach (University of Johannesburg)
Conference Proceedings chief-editors



Kathryn Pope (Greenside Design Center)

FOREWORD BY THE DIRECTOR OF GREENSIDE DESIGN CENTER

“A designer is someone who produces things that people don’t need to have, but that he, for some reason thinks would be a good idea to give them.” Andy Warhol

This is a rather amusing quote, but unfortunately has been very real for a long time. There is some kind of power designers believe they have that places them on a pedestal that is unquestionably the pinnacle for all to bow down to and accept what is dished up. The conference and the workshops that were held hand in hand really pushed the boundaries for design in general and design education in particular. The conference theme, Design with the Other 90%: Changing the World by Design, brought together some of the world’s best design educators to discuss the role that art and design could play in sustainable social advancement, particularly in the context of the African Continent. The proceedings focused on notions of respect, responsibility and sustainability and explored the vital role that design, visual culture and design



education plays in addressing pressing problems of our planet. In the African context design can play a big role in being involved in under-served communities that are rare benefactors of the work of artists and designers. The papers presented and the workshops held have potentially had a huge impact on the design landscape in Africa.

The three days also saw many opportunities to network and bring likeminded educators together. There were numerous events planned to allow the free flow of ideas such as the Cumulus Leadership and Strategy Working Group, the Desis General Assembly, the Sustainability Workshop, Integrating Social Responsibility into Curricular Workshop and the Stories from the Field Workshop. The three days culminated with a gala dinner in the cultural heartland of Johannesburg.

When this conference was conceived in Zurich, Switzerland in 2008 at the General Assembly of Cumulus it was presented as Design *for* the Other 90%. This changed to Design *with* the Other 90% and we can hope in the foreseeable future it will become Design *by* the Other 90%.

Prof Desmond Laubscher
Greenside Design Center



FOREWORD BY DEAN OF FACULTY OF ART, DESIGN AND ARCHITECTURE

It was a great privilege for the Faculty of Art, Design and Architecture at the University of Johannesburg to host the first Cumulus conference to be held in South Africa (and indeed in Africa). Since palaeontologists tell us that Africa is the origin of the human race as we know it, I suppose I'm really saying it was a great pleasure to say 'welcome home' to those who travelled from around the world to be here, and to add their voices to the important debate on how we design with the 'other 90%'.

As the Dean of a Faculty that is committed to fostering and promoting excellence in art and design education in South Africa, I never miss a public opportunity to advance my personal ethos that art, design and architecture are the most powerful transformative and democratic agents that we have. Architecture and design literally shape our world, giving substance to our ambitions for the present and

shape to our dreams for the future. This is particularly true in the South African context, where attitude and ingenuity must often substitute for resources, but which in turn enable us to continue finding extraordinarily elegant and effective solutions to the challenges of building our democracy.

As we face the grand challenges of our time, this conference reminded us of the important role that designers have to play in ensuring that we act responsibly in rising to these challenges. Design, broadly conceived, is both practical and deeply symbolic of who we are as a culture; although for most people design may be hidden in plain sight, we know that it informs everything in our environment.

One could argue, cynically, that the world suffers a surplus of product, but seems not to gain proportional value from it. The corollary of this is that most design seems to be motivated by profit, not need. Such profit is essential to any economy, but this presents a major liability that a responsible design philosophy cannot ignore. What this conference amply demonstrated is that is that robust design concepts – again, broadly conceived – legitimise their own implementation; without them, one is simply styling or blindly making.

In response to his own question, "To whom does design address itself: to the greatest number, to the specialist of an enlightened matter, to a privileged social class?" Charles Eames famously noted that "Design addresses itself to the need." In this spirit, this conference reminded us above all of two things: First, of the responsibility that we have as designers and educators to give shape and substance to the world that we hope to have and to leave behind, and second, that this will only be achieved if we are fully cognizant of the needs of the 'other 90 per cent'.

Prof Federico Freschi
University of Johannesburg

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A large group of people, across the world, have made significant contributions to the successful delivery of the Cumulus Johannesburg Conference and the publication of the Conference Proceedings.

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- Chris Bradnum (Curator of Design with the other 90% exhibition)
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- Angus Campbell (Chair of DESIS Johannesburg)
- Tamara Morgan (FADA Marketing)

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Lastly, the Cumulus Johannesburg Conference hosts wish to express a word of appreciation towards the Cumulus President, Prof Luisa Collina and the Cumulus Board for granting Greenside Design Center and the Faculty of Art, Design and Architecture the opportunity to host the first Cumulus Conference in Africa and in Johannesburg, South Africa.



Cumulus Johannesburg Conference Exhibition: Design with the other 90%

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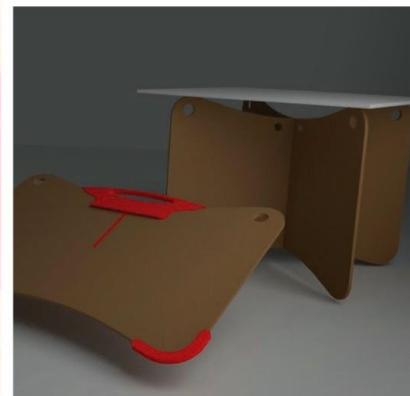


Illustration as displayed at the Cumulus Johannesburg Conference Exhibition: Design with the other 90%

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KEYNOTE SPEAKERS

Antoine Abi Aad

Antoine Abi Aad received his Masters in Advertising from the Académie Libanaise des Beaux-Arts in Lebanon in 2000. Shortly thereafter, he moved for seven years to Japan, where he completed both his Masters of Arts (2004) and his Ph.D. (2007) in Visual Communication Design at the University of Tsukuba. After a year of postdoctoral research, he returned to Lebanon to take up his duties as instructor and coordinator of international cultural events and exchange programs between universities at his Alma Mater, ALBA. Having Phoenician blood in his veins, Antoine loves traveling. He worked, exhibited, taught or lectured in Brazil, China, Cyprus, Dubai, France, Germany, Greece, Hong Kong, India, Japan, Kenya, Korea, Lebanon, Morocco, Peru, Poland, South Africa, Switzerland, Taiwan, Thailand, Tunisia and USA.

Mervyn Kurlansky

Mervyn Kurlansky was born in Johannesburg, South Africa in 1936. He received his design education at the Central School of Art and Crafts in London in 1960 and became a Director of the design consultancy service of Knoll International in 1961, a Partner in Crosby/Fletcher/Forbes in 1999 and co-founder of Pentagram in 1972, from which he resigned in 2003 to live and work in Denmark.

His clients have included multinational corporations, cultural establishments and educational institutions worldwide. Awards include; a bronze medal from Brno Biennale, silver awards from Designers and Art Directors Association and New York Art Directors Club, gold awards from the Package Designers Council and Japan's Minister of Trade and Industry, Gustav Klimt prize, and Danish IG design prize. In 2006 he was inducted into the South African Hall of Fame and in 2011 he received the Icograda President's award for his outstanding contribution to Design

His work has been featured in publications and exhibitions worldwide and is in the permanent collection of MOMA New York and the poster museum in Aarhus, Denmark. He conceived and designed the books, *Watching My Name Go By*, the first documentation of New York graffiti, and *Masters of the 20th Century* celebrating the work of the 107 speakers of Icograda London Design Seminars 1974-1999, he is also co-author of four books about Pentagram.

Mr Kurlansky is active in design education, lectures extensively and serves on design juries internationally. He is a former President of Icograda, a Fellow of the CSD, ISTD and the RSA and a member of AGI and Danish Designers.

Joel Towers

Joel Towers is Executive Dean of Parsons The New School for Design. He has served as Dean of Parsons since April 2009. He also serves as an Associate Professor of Architecture and Sustainable Design. Prior to his appointment, Joel was the Dean of the School of Design Strategies at Parsons. Under his leadership, the School of Design Strategies played a significant role in the development of new university-wide initiatives in urban design and environmental studies as well as plans for future graduate programs in transdisciplinary design and design management.

Prof Towers came to The New School in 2004 as the first director of Sustainable Design and Urban Ecology. In 2006, he became the inaugural director of the Tishman Environment and Design Center and Associate Provost for Environmental Studies.

Prior to joining The New School, Prof Towers taught in Columbia University's Graduate School of Architecture, Planning and Preservation, developing cross-disciplinary teaching and research focused on sustainability and urban ecology in relation to urban design and architecture.

Prof Towers received his Masters in Architecture from Columbia University and his B.S. in Architecture from The University of Michigan, Ann Arbor. He lives with his family in Brooklyn, New York.

Jenni Kruger

Jenni Kruger is the Programme Manager at Cape Town Design NPC, the implementation agency for World Design Capital Cape Town 2014. She has been closely involved in curating the 2014 programme, providing support to projects, engaging with stakeholders, and facilitating various collaborations and dialogues. Ms Kruger has brought to her role a commitment to social transformation, a systemic perspective, and insights into how projects play out in society and make an impact.

With her background in social anthropology and communication for development, Jenni has a decade of experience consulting in multidisciplinary projects, including public health, education, housing, social development and mobility planning. To these fields she brings awareness and practical tools that enable human-centred responses to challenges and opportunities. Through facilitating design thinking processes, participatory communication, organizational learning and in-depth qualitative research among diverse actors in a system, she helps to surface and integrate insights to guide the design, implementation and evaluation of contextualised, systemic strategies for sustainable social change.

Ms Kruger has worked in Argentina, Mozambique, Zambia, Zimbabwe and throughout South Africa with grassroots organisations, government departments, universities, private and parastatal research agencies, donors and foundations.

A PLACE FOR DESIGN IN TRANSDISCIPLINARY RESEARCH

Lorraine Amollo Ambole

Stellenbosch University

Abstract

Designing for the other 90% is not easy. That is why it has not yet been achieved. As a designer, I wanted to do something about this. I therefore joined a group of researchers who were working on a sanitation problem in an informal settlement in South Africa. We partnered with local engineering experts, who had a novel technology, and with community members from Enkanini to pilot an onsite sanitation system in the settlement. Our partnership turned out to be a prolonged transdisciplinary engagement that was not easy to manage. We run into multiple difficulties such as communication breakdowns and contentious positionalities. Through these difficulties I soon realized that the social aspects of our work were just as important as the technological system we were piloting. In this, I saw a social role for design, given the creative and generative impulse that design is known for. Consequently, I introduced co-design techniques in our engagements in a bid to facilitate our interactions. I thus conducted several co-design workshops for our group. The immediate effectiveness of these co-design exercises was relative, more so in the confinement of the workshop set-up. It was only upon reflection and continued engagement that I discovered the primacy of an underlying participatory ethos over the actual co-design tools. Through this process I learnt that design can and should take on a more social mandate, however difficult, if it is to achieve sustainable change, especially for the under-served 90% who need it the most.

Keywords: *Co-design, transdisciplinary research, informal settlements, sanitation.*

Introduction

A group of researchers from Stellenbosch University in South Africa have been working on informal settlement issues for the past few years. This group came together through their affiliation with the TsamaHUB (TsamaHUB, 2013) that supports a transdisciplinary (TD) programme for the university. Transdisciplinarity here means that researchers from a variety of fields come together to provide multiple disciplinary perspectives in the search for solutions to common problems. Beyond that, these researchers from the TsamaHUB are also collaborating with experts and community members from around Stellenbosch. This is done in the acknowledgement that non-disciplinary and experiential 'knowledges' are just as important when it comes to solving real world problems such as those in informal settlements.

As a PhD candidate, I was privileged to join a few other researchers from this group whose aim was to improve sanitation in Enkanini informal settlement, which is a walking distance from the rich historical town centre of Stellenbosch where the University is. Enkanini, like many other informal settlements in sub-Saharan Africa, is a poorly serviced area. Consequently, inadequate sanitation is a serious problem for Enkanini residents, who are forced to share communal toilets that are too far from some homes in the settlement, and are therefore inaccessible at night. To make matters even more

complex, Enkanini happens to be a fairly young settlement, having only started in 2006. For that reason, the leadership structures in the settlement are nascent and often fragile, making it difficult for outsiders like us to work with community members. Needless to say, the poor health and environmental outcomes of inadequate sanitation in Enkanini are an impetus for urgent action, yet that action requires a multifarious approach that is cognizant of the complexity of Enkanini as an unplanned area.

To provide that multifarious perspective, we came together as a TD group made up of PhD and masters students, civil engineers and Enkanini residents. In this way we were able to collectively engage with the sanitation problem in Enkanini by piloting an onsite sanitation system in Section E of Enkanini. The system has now been in use for several months and we continue to seek ways of improving it. What has resulted is a sustained engagement with the problem of sanitation as well as with the possible solutions through a recursive process of learning. It is in this recursive process that I see the contribution of design, given that design as a discipline has a flexible, creative and generative capacity that plugs into the recursive and iterative TD setting. To better understand this contribution of design in TD research, it is necessary to first expound on what is meant by TD and how it has evolved.

TD research

TD research has gained prominence as a new way of doing science with society. This is in response to the growing complexity of social problems that cannot be easily solved using mono-disciplinary thinking. Individual (mono) disciplines do provide in-depth, expert knowledge that are however, often limited to narrow views of a problem (Maasen & Lieven 2006; Talwar, Wiek & Robinson 2011) In our TD group, we have been able to supplement each other's field of expertise while also transcending the confines of conventional scientific approaches. In the group, the engineers provide technological expertise and professional experience, while the researchers, working together with Enkanini residents, have paid more attention to the social and institutional arrangements needed to sustain the innovative technology. More so, the residents provide very useful experiential knowledge, which is nonetheless nuanced and therefore hard to capture using traditional scientific methods.

As TD researchers, we struggle to accord equal importance to these nuanced and tacit 'knowledges' because they rarely conform to the neat and compartmentalized approaches of our scientific research. For Max-Neef (2005), according equal importance to both the rational (academic) and the relational (non-academic) types of knowledge results in a pluralist view of reality. In working together, our TD group has, to some extent, achieved a more pluralist view of Enkanini, by creating a multi-actor, multi-layer process around a common concern for improving sanitation. The hope is that the co-produced process and system we have collectively piloted can improve the lives of our fellow group members: residents of Enkanini.

The search for co-produced knowledge between science and society has become a focused discussion in TD research generally. This focus is supported by the call for greater collaboration, which is seen as an opportunity for research to solve some of the intractable global challenges we all face today (Pohl, Rist, Zimmermann, Fry, Gurung, Schneider, Speranza, Kiteme, Boillat & Serrano 2010, Swilling 2012). In this regard, the *Future Earth International Initiative* lists co-design and co-production of knowledge as a criterion for research that is aimed at achieving global sustainability. In co-design and co-production of knowledge, it is said that researchers and stakeholders need to be involved in framing research questions, analysing real world problems, and making sense of the

results together (Future Earth, 2014). This call for togetherness however hides the difficulty of actually co-producing sustainable change that is acceptable and accessible especially to those who need it the most.

The challenges of co-production arise in the confluence of a multiplicity of interests when researchers, professionals and community members come together (Wickson, Carew & Russell 2006). One of those challenges, from my experience, is the friction that arises in the interactions within the group, given the diversity in language, level of education and socio-cultural backgrounds in our group. Such diversity means that communication may not always be smooth while roles and positionalities are often contested, as happened in our case. Nevertheless, it is in those frictions that I learnt the most about the realness of the problem we were trying to solve. I realized, through such moments, that we were not just dealing with a sanitation problem that can easily be fixed with an appropriate technology. This is demonstrated in the fact that the system we piloted has indeed proven to be environmentally and technologically appropriate, yet other social problems have stood in its way of performing at capacity.

As a design researcher, I got very interested in these other problems that went beyond the technology. I was thus looking at how a technology is socialized and embedded within a particular community. Lopes, Fam & Williams (2012) demonstrate this concept in explaining how a dry sanitation system was socialized and embedded within a particular context using graphic design as a facilitation tool. In my own work I wanted to see a more extensive role for design in TD research. The following section hopefully elaborated on this interest.

Designing in TD

Design by definition, seeks to create new things. This characteristic plugs well into the emerging TD paradigm that seeks new ways of realizing sustainable solutions to complex problems. Designers who are looking to create such sustainable solutions have consequently reoriented their creative efforts towards more environmental and social concerns. Design for sustainability (DfS) best captures this reorientation of design towards social problems (Spangenberg, Fuad-Luke and Blincoe, 2010). Other approaches such as 'system design' also look beyond the product and search for solutions for entire systems (Vezzoli 2007:67). Designers tackling sustainability issues see these new approaches as opportunities to counter the exploitative, exclusionary and wasteful tendencies of the western industrial design model.

A variety of other terms are used to describe these new ways of designing for sustainability. For Swilling & Anneck (2012:283), an 'adaptive design' strives for sustainability by making use of networks and social co-operation. This is opposed to conventional design methods which are driven by individualism and detachment. Thompson & MacDonald (2005) also illustrate how 'emergent design' is flexible and can adapt to changing conditions while maintaining a core set of principles. For them, such a method is useful in designing for emerging contexts that are often highly erratic. All these authors agree that design needs to be socially aware in order to create products, systems and processes that are sustainable. This way of thinking influenced my research approach, as I sought to introduce co-design methods into our interactions as a TD group.

My conceptualization of co-design was largely informed by the human-centered design (HCD) approach (Human Centered Design Toolkit [s.a]) by IDEO, a renowned design firm. Subsequently, I

adopted the participatory and co-design philosophies from HCD to facilitate several co-design workshops for our TD group. In those workshops, I introduced cartoon-strip drawing as a dialogic method to enhance discussions amongst participants, especially those who were not comfortable using English as a mode of discussion. Beebejaun, Durose, Rees, Richardson & Richardson (2014) support this approach in speaking about 'beyond text' methods such as visual tools that can help participants express themselves more meaningfully.

If meaningful expression is enhanced for all participants then maybe a more participatory and democratic space can become a reality for all. For Mindell (2008) true democracy is important in achieving sustainable reconciliation. In our work, it became apparent that we needed to reconcile deeper socio-ethical issues and not just test a novel sanitation system. In this regard, my design research was not just about the visual tools in the workshops, it was also about how co-design as an ethos can improve our relationships.

Designing concrete and meaningful relationships within the TD group however remained a largely elusive task for me as I struggled to find my own voice as the only foreigner, and the only designer in the group. I also saw myself as part of the 'problem' as a participant in a difficult communication process, yet I was trying to be an 'outsider' in facilitating a communicative process through design thinking. My dilemmas were exemplified in the relative effectiveness of the visual communication tools that I employed; their worth was not immediately apparent in my initial analysis. It is only upon deeper reflection that I saw the importance of the underlying participatory ethos of trying to co-design.

The co-design exercises were merely nodes of an ongoing and necessarily long-term participatory journey. The attempts I made in this journey were nevertheless fruitful and immensely rewarding in the end, as I gained a lot of knowledge, about the piloting process as a whole as well as the system we were piloting. Bojer, Roehl, Knuth, & Magner (2008), describe these types of 'knowledges' as process and content knowledge respectively, which are the result of meaningful dialogue. For this paper, the journey we went through as a TD group in our dialogue with the Enkanini sanitation problem, yielded profound process knowledge, which I give greater importance in this paper than the technology itself, or the actual tools used in the co-design workshops. These technologies (figure one) and visual tools (figure two) were of course useful as content knowledge, but they have not been the focus of this paper. By focusing on process knowledge, I hope I have expressed a better understanding of the TD engagement at a more analytical and heuristic level, while firmly situating the role that design can play in facilitating transdisciplinarity.

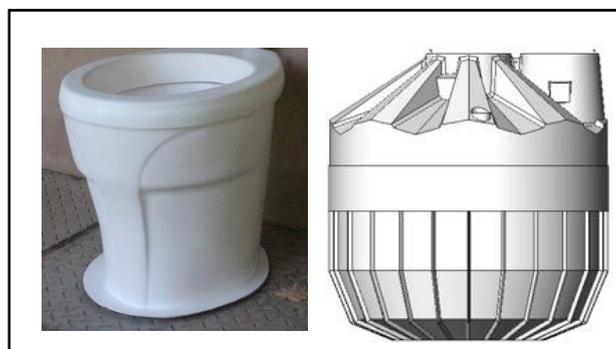


Figure 1: Some of the components of the technologies used in the piloted system; the pour-flush toilet bowl promoted by Maluti GSM and an anaerobic digester supplied by Agama, South Africa.



Figure 2: Some of the cartoon-strip drawings produced by the participants during one of the co-design workshops

Findings and Conclusion

A content analysis of findings of the co-design workshops indicate that visual tools are useful especially in TD settings, where diversity of interests and backgrounds need to find common grounds for communication. In this regard, my research showed that cartoon-strip drawing is one way to create a humorous, non-threatening and inclusive space for discussion, beyond the rational argumentation approach in academia, that is an obvious advantage for researchers and less so for non-academic participants like the Enkanini residents. I thus pose visual communication as an inclusive method that can advance engagements aimed at improving the lives of the under-served 90%.

Co-design further refers not only to the visual tools that I employed, but also to the attitude that foregrounds the use of such tools. Such an attitude maintains a core set of principles as described in the proposals for emergent design. It is these principles that support a flexible approach that is not confined by methods and procedures, but that is open to the nuances of the lived experience. One core principle in co-design that I considered paramount in our work was that of democracy. In my view, the democratization of knowledge should be the key aim of TD research and design can facilitate that journey towards democratization.

A new mandate for design is thus expressed in this paper that is congruent to the search for sustainable social advancement in TD research. I hope I have exemplified that social mandate of design by walking the talk: as a design researcher, I have thrown myself into a complex real-world situation that had no guarantees of success. My own research process has echoed this volatile and precarious condition of an informal settlement like Enkanini, where I struggled to make sense not only of my research but also of my identity. In this struggle, I realized that research for the other 90% is uncomfortable, unpromising, dangerous and absolutely necessary.

Acknowledgements

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residents. I also remain affiliated to the School of the Arts and Design, University of Nairobi, Kenya, where I hold the position of tutorial fellow on a study leave.

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DESIGNING ARTS-BASED INTERVENTIONS USING MULTIDISCIPLINARY PARTNERSHIPS FOR A RURAL SOUTH AFRICAN COMMUNITY

Kim Berman

University of Johannesburg

Lara Allen

University of Johannesburg

Abstract

Changing the world by design or 'design with the other 90%' implies a social justice and participative paradigm that uses an action research model for problem-solving and co-creation of products and processes that effect sustainable change through facilitating ownership and agency among the community participants. Respect and responsibility are vital in all socially responsible design and art particularly when the designers and artists come from different social and cultural backgrounds to those they aim to enrol through their creative work. This paper provides some responses to the 'why' and 'how' of socially responsible design and art making through introducing a comparative analysis of three successful case studies in which key characteristics of success are identified that can be replicated in future interventions.

The three cases occurred within a larger programme that fundamentally shaped them, and to which they have contributed significantly. This is a community engagement programme based in the Visual Art Department at the University of Johannesburg called 'Arts Based Approaches to Development'. The programme was funded by the National Research Foundation (NRF) from 2011-2013, and was extended to 2014 with funding from the University of Johannesburg. It aims to develop models of engagement through which the arts are used to contribute to the development and the empowerment of a rural community in a South African national poverty node. The community partner organisation is Tshulu Trust, which is based in HaMakuya, a chieftaincy in the remote north eastern Venda region of Limpopo Province.

Keywords: *arts-based-methods, civic agency, co-creation, design.*

Introduction

Changing the world by design or 'design with the other 90%' implies a social justice and participative paradigm that uses an action research model for problem-solving and co-creation of products and processes that effect sustainable change through facilitating ownership and agency among the community participants. In this paper the authors take as read the notion that socially responsible design and art is desirable and important. We agree that respect and responsibility are vital in all such endeavours, particularly when the designers and artists come from different social and cultural backgrounds to those they aim to enrol through their creative work. Here we offer some responses to the 'why' and 'how' of socially responsible design and art making. We do so through a comparative

analysis of three case studies in which we identify key characteristics of success in order that these may be replicated in future interventions

Context

The three cases we present occurred within a larger programme that fundamentally shaped them, and to which they have contributed significantly. This is a community engagement programme based in the Visual Art Department at the University of Johannesburg called *Arts Based Approaches to Development*. The programme was funded by the National Research Foundation (NRF) from 2011-2013, and was extended to 2014 with funding from the University of Johannesburg. It aims to develop models of engagement through which the arts are used to contribute to the development and the empowerment of a rural community in a South African national poverty node. The community partner organisation is Tshulu Trust, which is based in HaMakuya, a chieftaincy in the remote north eastern Venda region of Limpopo Province.

Four years of Participatory Action Research interventions through the engagement of Masters and honours students in the Visual Art Department at the University of Johannesburg, and Masters students from the 'Drama for Life' Department at Wits University, have delivered a number of art and design interventions in HaMakuya with the intention of contributing to positive social change. These have included the delivery of 'Paper Prayers' art and printmaking workshops in schools, applied drama workshops in schools and with community groups, 'photo-voice' interventions with community members, and the creation of public murals. The issues addressed each year were identified by community members through Tshulu Trust in collaboration with the Makuya Inter-sectoral Committee. These included HIV/AIDS awareness raising, health education about malaria, bilharzia and tuberculosis, teen pregnancy, rape and children's rights. These interventions all took place in collaboration with civil society, represented by Tshulu Trust and personnel from government departments such as the clinic with associated home-based care groups and primary schools.

Other cross-disciplinary design collaborations in the programme include the Masters students' research project in establishing a sustainable sewing co-operative that is discussed further below, a PhD study on culturally-appropriate stove designs for alternative energy by the UJ Industrial Design Department, and a collaboration with the UJ Sociology Department that saw a Masters student conduct an impact assessment of the UJ interventions as well as his own research into the relationship between orphans and vulnerable children in HaMakuya and the state.

The first year of the programme has been documented in an article entitled 'Deepening students' understanding of democratic citizenship through arts-based approaches to experiential service learning'. This article presents the structure of the experimental UJ visual arts community engagement module and analyses the deepened, critical learning that took place among the first group of students that took part in a one week field visit to HaMakuya (Berman and Allen: 2012). One of the methods used to achieve this quality of learning was the DEAL approach to guided reflection that aims to Describe, Examine and Articulate Learning across three domains deemed equally important: academic enhancement, civic learning and personal growth (Ash and Clayton 2009).

The focus of this paper builds on four years of annual interventions, and examines how the programme's core questions have been embedded and applied meaningfully in the three highlighted cases. While original theme of the Smithsonian exhibition *Design for the other 90%* profiled design

solutions that address the most basic needs of the 90% of the world's population not traditionally served by professional designers, this paper focuses on the application of collaborative participatory processes rather than on the 'user-centred' design of the products. It proposes that notions of respect, responsibility and sustainability frame ways that the design and principles driving a university-based community engagement module can be internalised and applied by student-activists, thereby enhancing the possibility of sustainable practice. This paper offers some insights about the active ingredients required to create a fertile environment for substantive, socially sustainable education initiatives that train students in socially engaged art and design practices.

Theoretical framework (the why)

'Civic agency' at Universities

The concept of *changing the world by design* requires a paradigm shift in re-purposing art and design education. We have adopted Harry Boyte's notion of "civic agency" to facilitate collaborative community engagement that addresses public problems and creates resources for communities. Reworked teaching and learning practices can deepen the capacities of agency in students and enable a deeper social responsibility for their roles in designing with "the other 90%" rather than only focusing on self-enrichment in the highly competitive art and design world that caters for the wealthy 10%.

Agency is the power to manage your life, to contribute meaningfully to the decisions that affect your life, and to shape the world in which you live. Boyte describes civic agency efforts to develop pedagogies and practices that are about empowerment of young people as an end in itself, not simply as a means to ends like improved test scores or "overcoming the achievement gap" (Boyte 2013: 4-8).

Civic agency initiatives often also seek system changes, creating "free spaces" in which people experience, help to build and maintain sustainable empowering cultures (Evans and Boyte 1992). Civic agency is an action-oriented political concept that describes the capacities of people to self-organize and "negotiate and transform a world that is understood to be fluid and open" (Boyte 2008).

Boyte cautions against the 'service learning' paradigm common in higher education institutions that embodies "the paradigmatic sense of the outsider expert" (Boyte 2004:12), or the empowered agent solving problems on behalf of people regarded as having little to contribute. Too many service programs "neglect to teach about root causes and power relationships, fail to stress productive impact, ignore politics, and downplay the strengths and talents of those being served" (Boyte 2004:12). He also points out that students in "this competitive, technocratic culture learn how to make arguments, and to demonstrate the flaws in others' arguments, but not how to tap the talents and wisdom of others in organizing collective work for the common good" (Boyte 2004).

As a way to counter the hyper-competitive environment in which young people find themselves, in which higher education systems focus primarily on individualised accomplishment with a dependence on authority, the UJ community-engaged experiential learning programme aims to develop students' capacities for self-reflection, critical thinking, self-efficacy, empathy, community and collective action. The three examples below present community action interventions that have created increased agency among student leaders, themselves artists and designers, in such a way that they see themselves as co-creators and change agents.

Methodology (the how)

Arts based approaches to facilitating social change present opportunities for co-creation and substantive mutuality across cultural and class barriers, or between the 10% and the other 90%. The three examples chosen work across three different arts methods: visual arts, fashion design and drama. The three young black male artists and designers that lead the example projects, Khaya Mchunu, Butana Peter Molefe and Jan Tshikhuthula, exhibit core values of civic agency and have in common the profile of graduated student as change agent. Their projects are presented for what they promise, as well as for what they have already demonstrated about the sustainability of impact of an intervention. All three started as students, and over several years emerged as leaders of people within and beyond their discipline. They are each taking the arts for social change ideal forward in their own way, developing and deepening it and making it relevant to a different generation. They have applied multi-disciplinary and participatory art and design interventions for rural schools in Limpopo Province that use visual art methods, fashion design and applied drama to collaborate with community educators, home-based-carers and unemployed women, building their confidence and leadership capacities.

Example one: Khaya Mchunu: Designing ‘with’, not ‘for’

Khaya Mchunu undertook his Masters research study on ‘The development of a new sewing co-operative for Tshulu Trust in HaMakuya, Limpopo Province through arts-based training interventions’ (Mchunu 2013). He collaborated with local women in establishing a sustainable source of income through enhanced skills and locally relevant design products. His approach provides an excellent case-study of the use of participatory action research (PAR) and community-centred design with regard both to his research design and to action in initiating a sustainable sewing co-operative.

Towards the last cycle of the research project, the four women of the Zwanako Cooperative planned their own fashion show to present garments they had made. The fashion show was the culmination of an 18 month process that demonstrated the successful outcome of many of the objectives that the PAR project proposed. The group was able to acquire sewing and production skills and critically apply their skills in the production of their own designs. They also developed skills for project management, marketing, client liaison, leadership and financial management, including invoicing clients, opening a bank account and registering their cooperative. Mchunu’s intervention created an enabling and creative space for community organising and civic agency.

Example two: Peter Butana Molefe: Applying drama for public enrolment and participation

Peter Butana Molefe was nominated by the Drama for Life programme at Wits University as one of two Masters students to attend and design a drama contribution to the UJ intervention in HaMakuya in 2012. He describes this experience as ‘life changing’, and found ways to return on five additional occasions, including volunteering for subsequent UJ interventions to mentor three additional Drama for Life Masters students. Molefe established a binding connection with ten of the Home-Based Care volunteers (HBCs) who administer health care and social services in villages in HaMakuya. The HBCs work closely with the Makuya Clinic Manager who helps to direct the themes of each UJ intervention such as increasing awareness about HIV/AIDS, malaria, bilharzia, teen pregnancy and rape. Molefe has spent time training the HBC group over three years deepening their skills in applied drama, acting and facilitating using role-play. They have performed their educational plays in up to ten schools, as well as co-facilitating workshops with Molefe, leading dialogues, performances and exchanges in Tshivenda. In an interview in 2014, the HBC members expressed an empowered sense of their

collective action or 'civic agency'. They asserted that through their work incidences of malaria and bilharzia have been significantly reduced, as has the high incidence of teen pregnancy in schools. They are confident that they are making a difference to the health and well-being of their community through inclusion of applied drama methods in their health campaigns.

Example three: Jan Tshikhuthula: Introducing visual arts to HaMakuya

Jan Tshikhuthula, a Tshivenda speaking visual artist, joined Artist Proof Studio in 2006. His own artwork is emerging as a success story in the art-world. Tshikhuthula has accompanied students to HaMakuya for the past four years and has led printmaking workshops and mural painting in the schools. While after each workshop a small kit of art supplies is left with the schools, teachers have not felt confident enough to continue the work, and we realised that local capacity needed to be strengthened. In response for several years Tshikhuthula mentored two local artists: Reuben Tshitangano, Tshulu Trust's Education Officer, and Moses Maliasi a talented young carver and artist. Maliasi co-facilitated printing workshops with UJ students and, inspired by Tshikhuthula as a role model, co-designed and led some mural painting projects. He also gained applied skills and job opportunities in sign-writing.

Findings

The *Arts Based Approaches to Development* programme offers insights through its participatory methodologies, best practice cases and theoretical frameworks. The three cases presented here identify ingredients that generate a fertile environment for substantive, socially sustainable education initiatives that aim to train students in socially responsible design and art-making.

Some of the key characteristics of the success of these projects include:

- The importance of regular return over several years, which establishes a depth and foundation that enables the building of trust in relationships and allows for effective scaffolding of learning;
- The sense of agency as collaborators and co-creators of new knowledge and collective public action;
- Arts and design methods that facilitate of effective communication and meaningful relationships across social and linguistic barriers and providing an effective bridge between the 10% and the other 90%;
- The process of co-creation as holding the potential to link relatively privileged students with under resourced rural people in a space of real communication and mutual respect for what the other brings to the shared project;
- Agreement in identifying a common goal – a social ill that all parties agree should be addressed. Examples include: poverty and unemployment, ill health through lack of knowledge and understanding about how to prevent certain diseases, and negative social behaviours that result in rape and teen pregnancy;
- Focus on the personal growth of students as individuals as this fundamental in the success of academic enhancement and civic learning.

Each of the three individuals featured in the case studies matured significantly over the period of the programme, growing in confidence personally and professionally. They provide examples of best practice using arts methodologies for civic agency. Each moved from being a student to being a lecturer or leader that younger students regard as role models. Each has informally mentored younger

students and has taken the opportunity to invite an intern as a collaborator and bring them to HaMakuya to enhance their growth process and extend their impact.

Conclusion

The authors suggest that these successful outcomes are in part due to the design of the UJ community engagement programme in which personal learning is emphasized equally with academic learning and civic participation. The DEAL model of experiential learning (Ash and Clayton 2009) provides a theoretical framing mechanism to structure the experiential learning of students. While it is unusual to formalise personal learning to such a degree in tertiary education, the authors propose that these cases of success provide evidence of the importance of this focus is in fostering civic agency in students. Although the class field visits to the rural sites are dependent on external funding, the community engaged curriculum model can be implemented locally by individual student leaders relatively inexpensively.

In fashion design, applied drama and visual arts, Mchunu, Molefe and Tshikhuthula have proven that the notion of socially relevant design and art practice can be a force for positive social change is both relevant and can be reproduced across generations. This new generation of civic artists are in turn nurturing the growth of individuals who wish to make the world a better place through the arts both through younger students and through community members.

Acknowledgements

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CO-DESIGNING IN RURAL UGANDA: MOBILITY AIDS AND INCOME-GENERATING DEVICES FOR PEOPLE WITH DISABILITIES

Amanda Cox

Carleton University

Bjarki Hallgrímsson

Carleton University

Abstract

This paper examines a two-year collaborative project concerning innovative design for people with disabilities (PWD) in the Kasese district of Uganda. It is estimated that 15% of people in Uganda have some form of disability. Although the number of those in extreme poverty is being reduced, studies indicate that PWD are being left behind. The project involves several international stakeholders including: universities, NGOs, and grass roots organizations for people with disabilities in Uganda and Canada. The project works with CanUgan, a Canadian NGO that works directly with the Kasese District Union of People with Disabilities, a self-organized group of people who advocates for the rights of PWD and provides devices to assist them. Through a process of co-designing with end users in Uganda, students have shown that uniquely designed products suitable for local needs can be developed successfully. Working with a local manufacturer allows prototypes and products to be tested with end users, leading to iterative improvements and quick changes to the design. Follow up work by a graduate student focused on researching knowledge transfer, capacity building, design efficacy, and the sustainability of the project. Specifically, one of the first products envisioned, a hand powered tricycle that also functioned as a solar powered cellphone charging kiosk, was provided to a number of recipients. The researcher was able to investigate how well the products would hold up in the field, how much money could be generated, and whether this could be a sustainable design from the point of view of business. Research methods included prototyping, questionnaires, personal interviews, and meeting with all of the stakeholders involved during a field trip to Uganda. The main conclusion is that though new innovative products may be well received initially, follow up research and continued involvement is necessary in order to create sustainable success.

Keywords: *Participatory Design, Design with the Majority, People with Disabilities, Uganda, Income-Generation.*

Introduction

The Design for Disability in Kasese (DIDK) Project was a two-year collaborative effort between Carleton University in Ottawa, Canada and stakeholders in Uganda and Canada. It was funded by a generous grant from the International Development Research Centre in Ottawa, Canada. The project was started through the Research Education Accessibility and Design (READ) Initiative at Carleton University and began as collaboration between Carleton's School of Industrial Design and an Ottawa-based NGO called CanUgan that raises money to support the Kasese District Union of People with Disabilities (KADUPEDI) in western Uganda. KADUPEDI is made up of volunteers who have

disabilities themselves and whose goal is to advocate and to assist others with disabilities in their region. One of CanUgan's main efforts is to support the local manufacturing of hand-powered tricycles, which are used to help people with mobility impairments transverse the rough terrain in the area. Whereas the School of Industrial Design initially became involved in the re-design of this locally made tricycle, it became clear that the design of new devices for people with disabilities in Kasese should consider economic empowerment as well (Hallgrimsson et al. 2013).

Although Uganda is progressing well towards its Millennium Development Goal of halving those who live in extreme poverty by 2015, it seems that people with disabilities (PWD) are being left behind (World Bank, 2014). It is estimated that 15% of the population in Uganda is disabled in some way (United Nations [n.d]). There is an undeniable link between disability and poverty, especially in the majority world, where 90% of the world's population resides. Disability is also the result of environmental pollution, lack of nutrition, and insufficient access to medical care (International Food Policy Research Institute, 2009). People with disabilities are often unable to access the traditional job market, and must be cared for by their family, which leads to stigmatization and marginalization. This project aims to provide PWD with unique new devices that assist them in mobility while also affording the opportunity to make their own income, in order to empower them to contribute to their family and gain independence.

There are many reasons to manufacture these assistive devices in Kasese. Local production reduces transportation costs, makes repair and maintenance throughout the product lifecycle possible, and creates local jobs. These jobs are not limited to those who build the devices, but include the recipients since the devices are built with economic empowerment in mind. A central tenet of the project involved designing *with* stakeholders, instead of just *for* end-users. By designing with input from the community, the manufacturer, local organizations, and through discussion with end-users, some of the original ideas completely transformed throughout the process, to better focus on the needs of the people who would receive the devices.

Methodology

Two cohorts of four undergraduate students from the School of Industrial Design participated in the project as part of their final year capstone project (Figure 1). The students spent a year researching needs, working directly with CanUgan and KADUPEDI, and travelling to Uganda as part of a field trip in the winter semester of their studies, before returning to Canada to complete their designs (Harambee Uganda Project 2013).

Each student was responsible for the design of a unique device that could assist those with disabilities in the Kasese region of Uganda. The students started by researching many relevant issues, such as: Uganda, agriculture, disability, gender, income generation, and access to technology and education (Design with the Majority 2014). They then exchanged emails and participated in Skype calls with KADUPEDI, to verify product needs as well as making sure that the materials and processes of manufacture would be available in Uganda. Drawings were sent to a local manufacturer so that he could create initial prototypes before the field trip to Uganda.

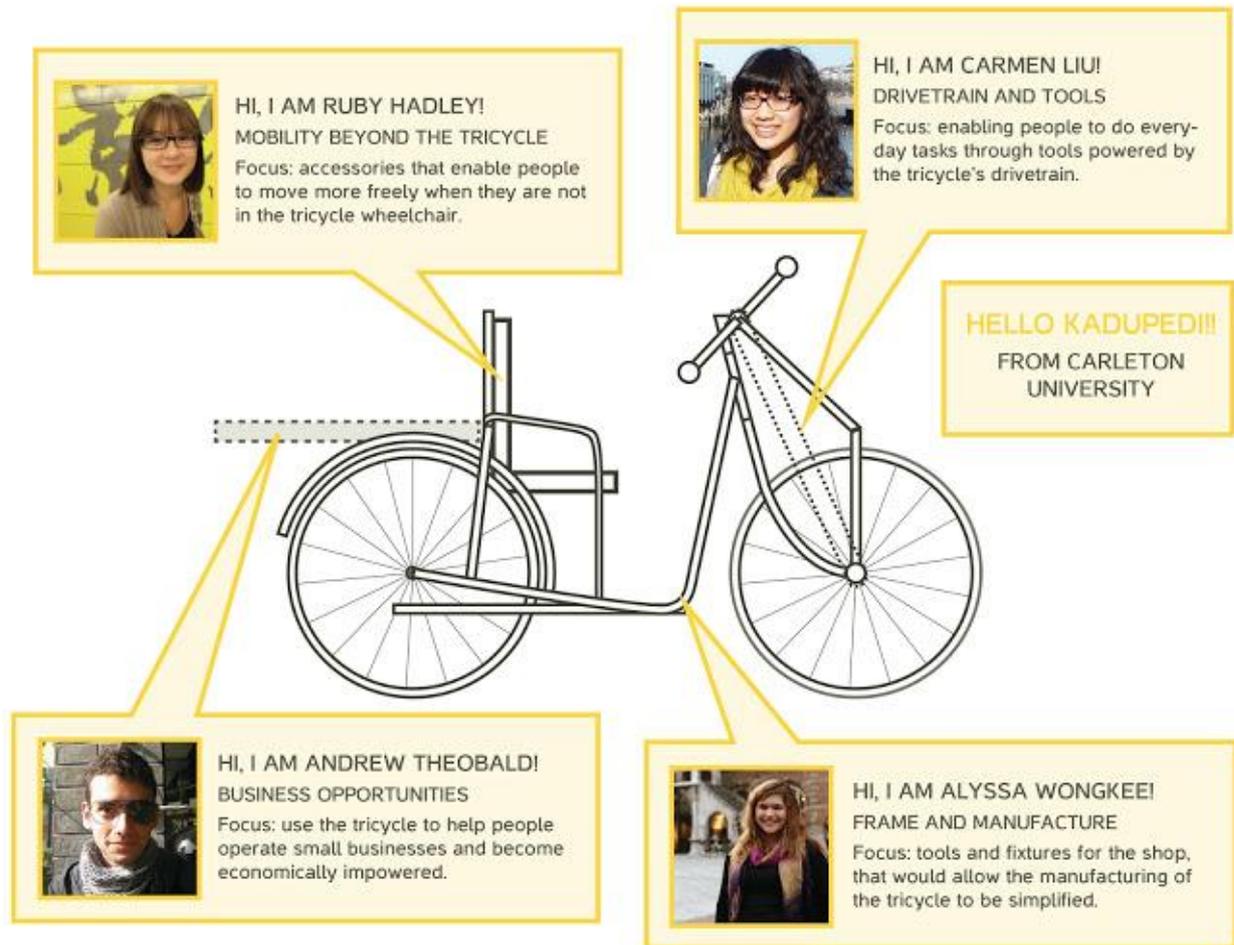


Figure 1: A summary of the first cohort of fourth-year student projects during the 2012/2013 school year (Harambee Uganda Project, 2013).

Once in Uganda, the students worked with local stakeholders including the manufacturer to validate and test the locally built prototypes. By working together with Kio, the manufacturer, they were able to iterate and make changes to the design quickly, thereby improving both the usefulness and manufacturing process for the device. Device recipients were invited to Kio's shop to give their input, by testing the devices and offering functional feedback. The students were also able to visit these recipients in their own homes, giving them a better understanding of what the lives of PWD like in the local community. This opened their eyes to the extremely basic living conditions and the reality of these peoples' lives. Back in Canada, the students used the new discoveries and insights to create final prototypes for their year-long project that in turn could be reproduced in Uganda.

Whereas the design projects were diverse in their scope, they primarily addressed mobility and income generation. Table 1 shows a list of eight projects done by the Carleton students as well as one project completed by a student from Makerere University in Kampala who joined the effort in the second year.

Year	Student Name	Project Description
2012/2013	Andrew Theobald	Solar-powered cell phone charging kiosk tricycle
2012/2013 2013/2014	Carmen Liu and Perez Magoola (Makerere)	Ground nut grinding attachment for the tricycle
2012/2013	Alyssa Wongkee	Re-design of the original hand-powered tricycle
2012/2013	Ruby Hadley	Rollator for the disabled and elderly
2013/2014	Jennifer Vandermeer	Wheelchair that converts to a hand-powered tricycle
2013/2014	Charles Williams	Ground nut shelling attachment for the tricycle
2013/2014	Luis Garcia	Self-propelled stool for kitchen gardens
2013/2014	Zoe Krug	Baby carrier seat attachment for tricycle

Table 1: Carleton University Student Projects (CanUgan Project) – 2012 to 2014

The graduate students work focused less on creating specific design details and more on the big picture and long-term success of the project. The main considerations included capacity building, knowledge transfer, sustainability, and design efficacy. Specifically the research focused on a detailed follow up of two undergraduate student projects completed in the first year that had exemplified how tricycles not only provide freedom, but can also be adapted to serve as platforms for income generation. The first project was a system for harnessing power from the hand-operated tricycle to do some other useful work. This was demonstrated through a grinder that could be attached to the drive-train of the tricycle in order to grind ground nuts into flour (Figure 2). The second project was a design that used the tricycle and a solar panel to create a kiosk where a person could charge mobile phones for a fee (Figure 3). The primary research methodology included building multiple devices of the solar-charging kiosks within a 12-month period and giving these to recipients to use in their everyday lives.



Figure 2: Tricycle with ground nut grinding attachment, designed by Carmen Liu (Harambee Uganda Project, 2013).



Figure 3: Tricycle with solar-charging attachment for cell phones, designed by Andrew Theobald (Harambee Uganda Project, 2013).

The research was broken down into the following four key questions: how does the device affect the recipient in both social and economic ways; does the device create independence or dependency; is the design appropriate for the user and their environment; and what can we learn from this type of cross-cultural, interdisciplinary “Design with the Majority” project? The research methodology was aided by a co-supervisor from the Institute of African Studies at Carleton and included three main sources of qualitative data that was triangulated for insights. Data was generated through questionnaires, observational research and interviews (Martin & Hanington 2012). Local volunteers

from KADUPEDI helped the researcher by distributing questionnaires that were filled out for each potential recipient (a total of 7) before and after the devices were given out. The researcher also did field work in Uganda for two weeks in February of 2014, in order to make observations and conduct in-person interviews with many different stakeholders (Bernard 2011). These included meetings with Makerere and Kyambogo universities in Kampala, with faculties related to mechanical engineering, fine arts, and disability studies. A workshop was held in Kasese with other disability organizations (including specific groups for women, children and land-mine survivors) and government officials in related departments. The research also included detailed discussions with members of CanUgan and KADUPEDI about their thoughts on the current states of affairs for PWD in Kasese, and what they would like to change in the future. The research thus examined many different factors that might influence a person's life, including; household income, daily chores/tasks, family structure, access to services in the community (water, electricity, etc.), physical ability (and type of disability), and future aspirations.

Key research findings

In terms of design process, undergraduate students learned many lessons that were noted by students, faculty and CanUgan representatives in follow up discussions. These focused primarily on the immense importance of designing with end users and other stakeholders, including the manufacturer. They also gained a new appreciation of how resourcefulness in manufacturing and creativity can overcome the lack of specialized tooling and processes. The students noted how they could not truly appreciate the culture and everyday life and reality of living in Kasese without the field work. Their ideas had been vetted and reviewed by CanUgan, KADUPEDI, and Kio Metalworks prior to their arrival in Uganda, however, the designs needed additional development that could only happen in the local setting. A prototyping mindset was essential in order to allow for much needed iteration of the design in the field (Catapult Design 2013). The most important aspect of this is that it shows incredible resourcefulness both by the manufacturer and the students to work together and find solutions that are context appropriate. Many of the adaptations that were envisioned for income generation are in fact what set the products apart and make them especially meaningful. These small volume adaptations are also something that the manufacturer now can envision on his own and has resulted in an interest to propose new and useful devices that he himself has designed including a charcoal powered popcorn machine and hand operated tool grinder unit. The idea of encouraging design innovation was noted by members of Makerere University as well.

Additionally the graduate student work provided much needed research into the deeper underlying issues associated with this project. Follow up research provided insights into the daily lives of the recipients and underscores the importance of how any organization that wishes to be involved in this kind of design project should stay involved past the initial design hand off. In the case of a not-for-profit type design project, this follow up becomes an extra challenge and cost for the project.

Subtle insights have a large impact on the success of the project, as shown by the following findings of research on recipients of solar powered kiosks. Before the project, it was unclear how much money the recipients could generate from such a business and how this could be tracked. Contrary to the presumptions of the design and research team, recipients were found to keep accurate daily records of their profits in a notebook. They were able to account for how the devices were being used and how much income was generated. This in turn allowed the researcher to compare sales results. The recipient with the highest average generated income was able to make five times the amount of the

lowest income generating recipient on average per day. This likely had many causes, including location, price charged, and time allotted to selling the service each day. The recipient with the lowest sales results lived in a more rural community, charged a lower price, and was also responsible for taking care of her family as well. At the same time both recipients had improved feelings of self-worth. Even just earning a very small income allows others to think of them as a contributing family member instead of being seen as a “burden” in their community (Cox 2014).

While visiting recipients it became clear that there were also other aspects to income generation that had not been foreseen. Whereas tricycles were brought inside at night in order to prevent theft, this also served another purpose of using the battery powered by the solar panel to light the houses at night. This was seen as a great advantage, since kerosene is still used for this purpose in the villages, but is both costly and harmful to indoor air quality. Research also uncovered issues with maintenance. Although the tricycles worked very well, routine maintenance was not always considered from the beginning, such as changing the tires or minor mechanical failures. The solar-charging electrical components also ended up being much more expensive than originally anticipated, necessitating more research and sourcing in order to bring these costs down in the future. These types of issues highlight the importance of more involvement from local authorities and universities. In order to make the project more sustainable in the long run, discussions have been initiated with Makerere University, due to the proximity of their campus and their willingness to use their technical expertise to help with these types of projects. One such project was already initiated and looked at how the ground nut grinder, which was designed and developed in the first year, could be improved and built completely from locally sourced materials as opposed to using an adapted maize grinder from overseas.

The most important aspect of these types of projects is continuous and long-term monitoring and evaluation. Although a project may originally be well-received, it is likely that problems will occur down the line. Some devices were found to end up breaking and subsequently being unused. Follow-up also allows designers to see how people are using the products, and modify them to better fit into the lives of the people who will use them (Figure 4). It is also important to do small prototype runs of products for testing before implementing on a wide-scale, which prevents unnecessary mistakes from occurring. This follow up can include questionnaires and interviews and can now be greatly aided by KADUPEDI.



Figure 4: Fauza - A current tricycle user with a solar-charging attachment (Photo Credit: Amanda Cox).

Conclusion

This case-study taught us (and our partners) many new things about the convergence of design, development, poverty, and disability. However, since it was a small sample-size, it is essential for others to conduct similar research in order for people to understand the effects of design and products on the field of international development. The researcher would like to encourage other designers to start thinking about design for the majority world. Not only are these projects beneficial for device recipients, they also offer a financial incentive, and empower people with disabilities in poor regions in a variety of ways as shown through the results. It is important for designers to understand that these projects are not easy, and that there are many complexities involved in projects that span cultures, languages, disciplines, and continents. However, by bringing together a group of partners who are committed to achieving a goal that is beneficial for everyone involved, groups can work together to ensure equal access to design for all.

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#WDC541 MIDA OBJECT AND SYMBOL: A MULTIDISCIPLINARY PARTICIPATORY DESIGN WORKSHOP

Monica Di Ruvo

Cape Peninsula University of Technology

Johannes Cronje

Cape Peninsula University of Technology

Abstract

A multidisciplinary workshop exploring the relationship between people and objects and the cultural weight borne by these objects was held as a recognised World Design Capital project. Curated by Chiara Alessi and co-ordinated by the author, the workshop, based on participatory design methods ran for one week from 19 to 23 May 2014. Groups of interior and industrial design students, as well as members from the Langa community, formed three workgroups facilitated by a team of Italian designers and lecturers from the CPUT faculty of informatics and design. The workshop culminated in an exhibition of design artefacts entitled MIDA object and symbol: a contemporary African aesthetic. It is intended that the exhibition will travel to Milan later in the year. The workshop was based on the concept that “products embody notions of identity and become tokens in the symbolic exchange of meaning” (Buchanan and Margolin 1995). Participants in the workshop were required to bring objects that according to them embodied meaning. During the course of the workshop these objects became instruments for collective design. The workshop outcomes were presented as a collection of artefacts at an exhibition. Svensson’s (2003, 193-194) five key points for interdisciplinary processes are used as guidelines for discussing the workshop which was documented on video, photographically as well as through reflective narratives obtained from the participants. The results are presented in this paper as a reflection on South African design education and interactions with local communities.

Keywords: *participatory design, identity, multidisciplinary.*

Introduction

A multidisciplinary workshop exploring the relationship between people and objects and the cultural weight borne by these objects was held as a recognised World Design Capital project. Curated by Chiara Alessi and co-ordinated by the author, the workshop, based on participatory design methods ran for one week from 19 to 23 May 2014. Groups of interior and industrial design students, as well as members from the Langa community, formed three workgroups facilitated by a team of Italian designers and lecturers from the CPUT faculty of informatics and design.

The concept that “products embody notions of identity and become tokens in the symbolic exchange of meaning” (Buchanan and Margolin 1995) was the overriding theme for the workshop. Participants in the workshop were required to bring objects that according to them embodied meaning. During the course of the workshop these objects became instruments for collective design. The workshop culminated in an exhibition of artefacts entitled MIDA object and symbol: a contemporary African

aesthetic. It is intended that the exhibition will travel to Milan later in the year". The motivation for the workshop was to engage with other disciplines within the faculty of informatics and design and to try to engage with communities through service learning in a participatory manner.

Literature survey: Design in contemporary culture

Coinciding with South Africa's new democracy, Buchanan (1994:19) in a keynote address at "Design: pleasure or responsibility" in Helsinki noted that designers were responding in different ways to challenges faced due to consequences of design actions taken in previous decades, this manifested in a shift from the traditional twentieth century practice of designing objects to the inclusion of systems and strategies. Buchanan called this "third order design". Fourth order design refers to the introduction of culture as a mediator in systems thinking based on collaborative work. This order of design is based on designing for individuals within a specific context. Golsby-Smith (1994:267) elaborates on 4th order design by addressing the practical application of culture systems and integration in design. He explains that fourth order design pursues the realisation of purpose and context as well as coherence and integration around a task, whilst acknowledging related processes and influences. Fourth order design involves people and communities.

Buchanan (1994:19) mentions the important role that design education can play to better equip designers to engage and practice in this environment. Twenty years later South African tertiary design institutions have acknowledged this position with a service learning component present in curricula. It has been my observation that at best interventions have a positive impact and are sustainable, at worse they can be insignificant interventions with a top down approach upon communities without any meaningful community participation. The Cape Town World Design Capital offered the opportunity to host this workshop and for us to open discussion around this idea within our faculty. Participatory design methods may include cultural probes, diary studies, photo studies, collage, flexible modelling, creative tool kits and, as in this instance, design workshops (Martin & Hanington 2012).

Design Workshops consolidate co-design methods into organised sessions for participants to work with designers and offer a platform for collecting insights and securing trust (Martin & Hanington 2012). Techniques can be employed such as collage, mapping or diagrammatic exercises targeted at understanding the users world. In this instance the objects brought in were the probes and they were used to enable the design students to explore notions of symbolism relating to the community. The process followed and described below is as per the description offered by Martin and Hanington (2012:62).

Method: The Workshop

The workshop programme had a similar format each day, starting with a presentation by a guest speaker, followed by a group design session on days one and two and making sessions on days three and four. Each day ended with a group discussion and reflection of the day's events. Day five was dedicated to setting up the exhibition under the guidance of Peter Bottazzi with material loaned to us by the sponsored venue.

The participants were divided into three workgroups each facilitator/s prepared a brief responding to the overriding theme of "object and symbol". Typically several pre-planned activities would be included by the facilitators, in this workshop this consisted of short exercises followed by group discussions.

Group 1

Odoardo Fioravanti, an industrial designer, facilitated one workgroup with Bradley Naidoo, a previous gang member who now runs Chisana Tours to the Cape Flats educating the public about gang activities. This workgroup was tasked with considering the human need for belonging as identified by Maslow (1943). Memberships to exclusive clubs were compared to the gangs of the Cape Flats each with paradoxically similar behaviours and symbols manifested by dress codes, insignias and badges or by graffiti and tattoos. Each participant was asked to bring samples of physical symbols; objects symbolising membership such as badges, pins, flags, icons, or tags representing groups, clubs or associations. Research and discussion was centred around gangs on the Cape Flats, their association with criminal activity and how to rethink these ideas. The approach was to use these symbols as metaphors and as inspiration to design new objects or symbols conveying a positive message.

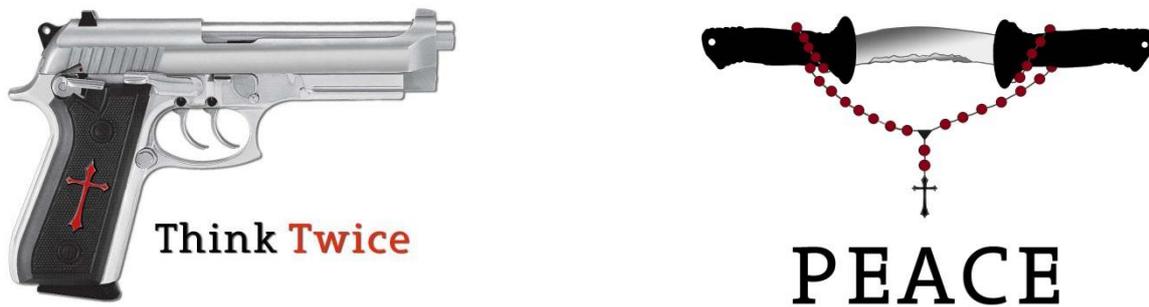


Figure 1: Group 1 Chisana Tours, artwork for printing onto garments.

Group 2

Andrea Magnani and Giovanni Delvecchio, co-creators of Resign, a creative meta-project that re-looks and re-combines signs embedded in waste objects, paired with Andile Sigasana, an entrepreneur and owner of the Born Free clothing brand in Langa. This group used the kitchen as a starting point, a strongly symbolic space in Italian culture, representing the sharing and celebration of daily life. The aim was to think about ways of living in relation to differing historical and social landscapes. Participants were requested to work around an everyday object from the kitchen preferably with a history or which possibly belonged to a family member or friend. The task was to design a setting against which to display this object. The display could cover, surround, support, contain or amplify the object's memory in order to celebrate the rite with an innovative message. In this instance Andile actively participated in the entire workshop and engaged in all the discussions with the facilitators and students.



Figure 2: Group 2 Born Free, artefact with edible candy.

Group 3

Denise Bonapace and Peter Bottazzi facilitated this workgroup with Tony Elvin from Langa Quarter a heritage precinct within Langa. This workgroup considered the way an object, if grafted and developed in a conscious way, may be transformed from mere domesticity to a collective element for overcoming barriers, prejudices, and stereotypes. The object became a hypothetical trampoline, made possible by a community contributing to its realization. Students were required to bring traditional and contemporary objects symbolizing South Africa and if possible, Langa Quarter in Cape Town. Work started as a group, developing ideas with a common objective, and then developed into a collection of objects realized individually by the participants. Each individual piece having its own design function; yet finding its ultimate realization as part of a collective installation as an aspirational symbol of overcoming barriers.



Figure 3: Group 3 Langa Quarter, "Spoonerism".

Discussion

Participants were requested to write short reflective notes at the end of days 1, 2 and at the end of the workshop. I then tabulated this data according to the five key points for interdisciplinary processes suggested by Svensson (2003, 193-194) and present some insights below, my role as co-ordinator was an observational one and notes of my observations some of which are included here, were made in a journal.

"Willingness to break out of discipline specific structures".

It was noted that as students were allowed to select which group they wanted to participate in, groups of friends tended to work together at first, as the workshop progressed, more interaction took place and at the end of the workshop there seemed to be an awareness of other disciplines and skills.

"They exposed us to new design process ways and also helping us identify problems in different ways. They showed us that a concept is not the only meaning of a product and that something designed can have more than one meaning".

"Somehow we are forced to be abstract thinkers rather than straight forward designers".

"It has shown me that design is diverse and that as a designer you have to be flexible in terms of adapting to different departments of design".

“Openness to ideas of people with different backgrounds”.

I observed that the students appeared very interested in learning from the community representatives and the Italian facilitators. In some instances language was noted as a barrier. At times I translated for the facilitators but as my role was as an observer, I was aware of not interfering with their process.

“Learning about new and different cultures and ways of thinking was a personal highlight”.

“For me it was difficult firstly the language and communication barrier was breach a lot and sometimes my ideas were lost in translation, in the end the final product was not what I intended only by a small fraction since ideas were lost in translation”.

“Knowledge of current themes and relevant fields”.

During the workshop awareness grew considerably. The presentations by the designers were very inspirational each morning and students appeared more interested once they realised the level of skill and expertise that the facilitators were bringing to the workshop.

“As an individual this theme was not as difficult since Interior design there is a little bit of furniture and product design, but it did open up my eyes to what machinery is used and the endless variety and possibility of materials that can be used”.

“As designers we were all tested and we shared our expertise”.

“Maintaining a strong sense of identity about who we are and where we came from”.

The use of the object as a starting point for conversation proved to be a valuable tool for all participants as a way of crossing cultural boundaries. The Italian facilitators were surprised at the diversity and level of division still so apparent in South African culture after 20 years.

“Our theme of having a house hold object brought about similar thing we do and share in the kitchen. Looking past the culture and race we as people act similarly unintentionally”.

“I kept my design local and it came from my background. in addition to that I choose an item which is not only from my background, but rather a common item which can be used by people from different backgrounds”.

“A passion for exploring new arenas and not giving in to standard solutions”.

This proved to be challenging for some of the students, but at the end there was an appreciation for the process undertaken in order to respond to a problem in an innovative way.

“I think as I experienced this it was difficult to suddenly change this well-known method to something which is completely out of one’s comfort zone but also I think everyone was able to learn out of this new experience and maybe also adhere to this new way of designing”.

“Yes to be more passionate about your work and to involve the other designers in your work, more presence and more influence”.

Conclusion

The students that responded found this workshop challenging, however the feedback on the final artefacts displayed on exhibition was positive and the end products sparked conversation around a gentle, non-invasive way of engaging with communities. The community representative that was

present for the entire workshop noted that the skills he learnt in the workshop would benefit his business indefinitely.

It was interesting to observe that students that have not displayed strong conceptual skills in our normal studio situation were able to come up with some of the most innovative outcomes on display at the exhibition. In this way it is my opinion that the workshop was of some benefit to all participants and that this attempt to apply fourth order design approaches to a service learning application, could offer opportunity for further multidisciplinary meaningful engagement with communities.

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FROM COMMISSION TO SOCIAL MOVEMENT: RESEARCH-LED DESIGN IN ACTION

Patricia Duignan

Virginia Commonwealth University Qatar

Haneen Al Sharif

Virginia Commonwealth University Qatar

Hadeer Omar

Virginia Commonwealth University Qatar

Byrad Yyelland

Virginia Commonwealth University Qatar

Abstract

In May 2013 the Center for Research Design and Entrepreneurship received a commission from the company Maersk Oil Qatar to design a brochure about the proper installation and use of child car seats. The team tasked with creating the brochure began with a question: how can design change peoples' behavior? This question was the first step toward the quick evolution and exponential expansion of the project from a single brochure on child car seats to a nation-wide campaign and social movement encompassing all aspects of road safety. The Center for Research Design and Entrepreneurship at VCUQatar began with ideas for the commissioned brochure on child car seats as a foundation and turned to both qualitative and quantitative research methodologies to answer key questions about changing behaviors and the impact of design. The multidisciplinary team combined design thinking and participatory research to develop a series of pilot projects, which led to the development of the "ONE SECOND" campaign. The government of Qatar has adopted this campaign and the team is now responsible for deploying the project nationwide. This paper presents the evolution of the project from small and focused to large-scale and widespread, and the integration of research and design at each step. The "ONE SECOND" campaign is as an example of a successful integrative-interdisciplinary research project that demonstrated a practical model applicable in addressing social problems.

Keywords: Qatar, Road Safety, design thinking, interdisciplinary design, child car seats.

Introduction

The Center for Research Design and Entrepreneurship (CRD&E) at the Doha, Qatar campus of Virginia Commonwealth University (VCUQatar) received a commission from Maersk Oil Qatar to design a brochure about the proper installation and use of child car seats. CRD&E engaged a team of VCUQatar design graduates to undertake the task of creating a brochure. The flyer was intended to promote a give-away of 7000 child car seats to new mothers in Doha's Hamad Women's Hospital.

Charged with the task, the team launched a research-led design process that quickly revealed road safety is a highly complex and multifaceted social problem that requires an in-depth understanding of the impacts and relationships among a long list of variables. The team invited a social psychologist, experts in road safety, medical professionals, road engineers, educators, students, parents and government policy makers to collaborate in a participatory and multidisciplinary approach to the problem. Design thinking served as the platform linking this diverse group of participants. This paper traces the chronology of this project and outlines the substantive benefits of adopting this wide-spectrum participatory and multidisciplinary process in Doha, Qatar.

The Problem

Qatar is one of the richest countries in the world (Begum, 2014) and “the world’s largest producer of LNG (liquefied natural gas)” (Ahmad, 2013). While Qatar in the 1970s had a small and homogenous Arab population of approximately 110,000, its population has increased almost 20-fold over the last four decades to just over two million (Qatar Statistics 2014), and this is driven primarily driven by immigration (Qatar Statistics, 2014). Foreigners now make up 70% of the population (approximately 2.1 million) and an estimated 92% of the private sector workforce (Qatar Statistics 2014). Qatar is currently investing over 100 billion USD to develop its infrastructure over the next decade to facilitate hosting a number of events including the world cup in 2022 (“Qatar to invest \$200bn in infrastructure sector”, 2013.). This accelerated development has meant an increased surge in the number of vehicles on the road, from 287,500 vehicles on the roads in 2000 to 876,039 in 2012 (“Qatar’s rising population placing strain on infrastructure,” n.d.). As a result of the development Qatar has a multi-cultural community of road users, each having different education, awareness and driving practices. Discussion with stakeholders in this research has shown that the cultural mosaic at play on Qatar’s roadways has often resulted in frustration and confusion amongst drivers and pedestrians, and a perception that there is little respect for traffic laws. Initial research confirmed that road accidents account for one out of every eight deaths in Qatar, and are responsible for more deaths than cancer or cardiovascular diseases (Oliveira, 2013). However, this shocking statistic does not provide specific information related to actual causes of accidents and fatalities. Specifically the information related to baby seats was minimal and therefore more research was required to ascertain, as closely as possible, the extent of the problem. A second phase of research was necessary to dig deeper and enable the team to develop a specific and workable research question. Following that, the team would need to develop one or more solutions to the problem and finally, develop a method for measuring impact of these solutions, or in other words, the impact of the designed solutions.

Design for Diversity: Multidisciplinary and Participatory

The initial entry point for this research team was to apply graphic skills and strategies in designing a brochure, but collaboration across disciplines enables researchers from disparate backgrounds to come at the problem from a variety of perspectives and thereby laying the foundation for insights that might not otherwise have arisen (Patel et al., 2014). For example, psychological research reveals the ages of 17 to 24 years as most vulnerable to traffic fatalities around the world, (Scott-Parker et al., 2009) and delineates psychosocial causes (Raymond Bingham et al., 2008). In Qatar, Hamad Medical Corporation Trauma Surgery recorded road traffic injuries throughout the calendar year of 2010 (“HMC, SickKids Explore Strategy for Children Transportation Health”, 2013). During that time they attended to 4,864 patients with traffic-related injuries, and almost one in ten (9.1% = 443) were children aged between 0-18 years, within that number 40% of whom were ages 15-18. Sociology also contributes with research indicating gender (Raymond Bingham et al., 2008) and culture (Banakar and

Fard, 2012; Redshaw, 2001) correlate with traffic accidents. The team therefore engaged a social scientist with experience in both psychology and sociology as collaborator on this project, a form of multidisciplinary supported in the literature as a highly effective when working with a road safety campaign (Hoekstra and Wegman, 2011). In addition to graphic design, psychology and sociology, the project team utilized a user centered design (UCD) (Patel et al., 2014) process that was involved participation from stakeholders in the social spheres (Björgvinsson et al., 2012). Or in other words, a “co-design process” (Steen, 2013). This approach has worked well in designing effective road safety campaigns (Hoekstra and Wegman, 2011) and geometric highway layouts (Kanellaidis and Vardaki, 2011), and was deemed the best alternative for the highly communal culture of Qatar.

Data was collected during the research phase of this project through triangulation (Creswell and Clark, 2010). Triangulation “allows the researcher to pinpoint aspects of a phenomenon more accurately by approaching it from different vantage points using different methods” (Sommer, 2002). One leg of the triangle utilized by the team was comprised of interviews with stakeholders including people within the Ministry of Interior (MOI), Supreme Education Council (SEC), Hamad Medical Hospital, Qatar University and faculty within VCUQatar including graphic design professors. The second leg of the triangle consisted of reviewing relevant documentation. Personal observation formed the third leg.

Through interviewing a member of the traffic department, the team learned about the complexity of the problems facing Qatar and specifically, the lack of any laws that might force passengers in the back seat of a vehicle to use seatbelts or car seats for babies and small children. This raised the question as to whether giving free baby seats to mothers would have any impact on saving lives. The team used observation techniques to analyze the existing driving behaviors in Qatar and found that children were commonly unrestrained in the back of the vehicle, and often sitting in the front seats. In some cases, newborns were held in the lap of the mother in the passenger seat or, more shockingly, by the father while he drove the vehicle. Review of relevant documentation revealed that previous road safety initiatives had been launched in Qatar, including various campaigns, speed cameras and better roads, however the data indicated these initiatives had achieved only minimal success (“Over 500 road accidents reported in February in Qatar,” 2014). This led the research team to investigate optimal approaches to road safety campaigns from around the world (Hoekstra and Wegman, 2011). The research team also investigated literature about attitudes toward risk taking for the target age group, this target gender (predominantly male) and this target cultural population (Arab). A key premise underlying this research was that changing attitudes does not always equate with behavior change, thus necessitating a focus on changing the behavior itself (Howell, 2014).

Informed by and utilizing the multidisciplinary and participatory UCD process, the team worked from the standpoint that a design solution must embrace a cultural approach (Redshaw, 2001). The research team developed a design solution that included four key components: creating public awareness, educating the public, law enforcement and engineering the pillars of behavior change. These four aspects needed to work in tandem to effect the desired changes in driving behavior.

Solution

As part of the initial research, local and international road safety campaigns were identified and studied. The team determined that previous initiatives for road safety in Qatar included unclear messages and failed to provide positive impact. Many of the issues on the roads are related to a lack of understanding of the laws and non-visible enforcement. Fortunately, the design team consisted

of alumni design graduates who grew up in Qatar and possessed a unique understanding of the local culture. These individuals worked alongside non-local professionals to create a brand and strategy that would appeal to the wider audience living in Qatar. The team created a strategy for a national campaign to influence behavioral change by appealing to their conscience through targeting values and beliefs. Informed by the literature, this campaign was designed to utilize culturally relevant education in changing definitions of acceptable and unacceptable driving behaviors (Banakar and Fard, 2012); Redshaw, 2001). Part of the strategy for baby car seat campaign included a giveaway to new mothers at the hospital before they were discharged. To receive the seat the parents had to attend a demonstration of the correct use of the seats. This is a key component of the One Second strategy due to the multi-cultural society in Qatar.



Figure 1: ONE SECOND child car seat campaign initiative, social media posts, branding and advertising mock-ups, May 2014. Photo MOI, VCUQatar Doha, Qatar

Brand identity was the first focus in the development of the campaign. The decision was taken to create a bilingual campaign in Arabic and English because English is the second language of Qatar and spoken in all businesses. “ONE SECOND” was designed to serve as a platform and unites the many initiatives related to road safety in Qatar appealing to the local and international community. The first initiative launched under the ONE SECOND brand was the child car seat give-away but the campaign did not stop with just giving away car seats to new mothers. New mothers also received

training in the proper installation and use of the car seat. The campaign also attempted to engage the wider community through television commercials (TVC's), radio commercials and competitions advertised through ONE SECOND's social media channels including Facebook, Instagram and Twitter inviting the audience to participate using the method of incentive by offering a baby car seat to the winners.

Action

Over a period of twelve months the team engaged in concept development and the design of three major campaign initiatives, the launch of ONE SECOND the new brand for road safety, the *Child Car Seat* initiative and a *Students for Road Safety* program. These campaigns were designed to engage the local community in promoting safer driving in Qatar. These projects played an important role in making the campaign more effective because the community members felt more connected to the cause and raised a sense of a social responsibility towards road safety issues in Doha, as was determined through interaction with the community via social media channels where the community provided comments and feedback.

Social psychology has long recognized that "Children, even young children, are important members of the family decision-making unit" (Gaumer and Arnone 2010), recognizing this the team is developing a school-based educational program in addition to the baby seat give-away. The school campaign, "Students for Road Safety", centers on a state-of-the-art driving simulator designed by Williams Advanced Engineering in Qatar supported by Maersk Oil Qatar. The simulator allows students aged 12-18 to participate in a fully immersive driving experience based on the roads of Doha and under the instruction of professional driving instructors. The VCUQatar team collaborated with the Williams Formula One engineering team to design the mobile space that housed the simulator. The designers designed the exterior and interior space using info graphics to communicate additional messages related to road safety in a playful and engaging way thus providing more information to the students that entered the simulator. Local stakeholders participated through focus groups with children from local schools to gauge their understanding and perception of the simulator and road safety messages. The students were invited to participate in designing symbols and ideas for the icons that became part of the graphics and communication messages used on the simulator.

To bring this proposal to life and find a sustainable way to support the ideas the team engaged with members of the National Traffic Safety Committee and SEC and suggested that this campaign could become part of the national educational framework for schools. Currently, research team members are collaborating with educational stakeholder organizations and supporting them by training employees how to run the activities in schools. The team is also developing and designing a variety of educational packs for schools which include activities related to specific road safety messages including the use of seatbelts, child car seats and practicing good pedestrian habits. To support development of the program, the design team has engaged with a professor of public health in Qatar University to create an effective set of Key Performance Indicators and measurement criteria designed to assess students' understanding of road safety messages.

Recognizing the importance of engaging community, the team used social media as medium to reach a wider audience and engage them in conversation and discussion about their everyday experiences on the roads of Doha. Messages are the results of research-led design to target a diverse audience through the use attractive bilingual posts that will elicit audience interaction. Within eight months, ONE

SECOND, a previously unrecognized brand, reached more than 21,000 likes. These sites have become an integral part of the strategy for ONE SECOND and will be utilized in new and innovative ways in the future. The team continues to meet weekly with the MOI to seek approval for the posts and develop new ideas for the campaign.

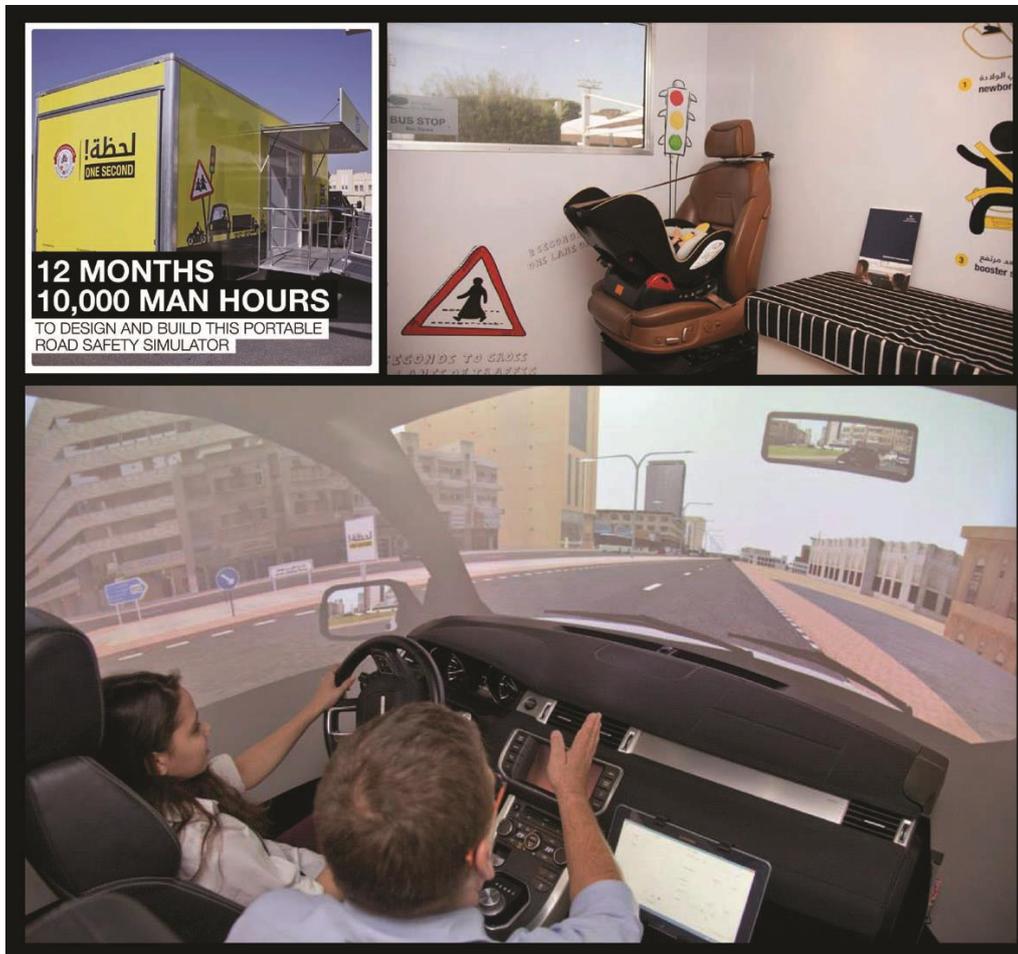


Figure 2: ONE SECOND Students for Road Safety Initiative, educational driving simulator, Williams Engineering, November 2013. Photo MOI/VCUQatar Doha, Qatar

Future

The next steps are to evaluate the effectiveness of these initiatives. The interdisciplinary team will create an evaluation methodology and criteria that will help define the Key Performance Indicators of the program and evaluate its effectiveness. The team's experience working in this uniquely interdisciplinary process has helped shape their understanding of the value of collaboration across disciplines when designing solutions to complex problems. The designers have recognized that the methodologies developed for this project can also be used in future projects.

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ADDING VALUE: EXPLORING USER CONTEXTS IN SERVICE DESIGN TOOLKITS

Vikki du Preez

Cape Peninsula University of Technology

Abstract

The aim of this position paper is to identify the impact of user context and possible participation barriers within (Service) Design toolkits. Service Design, as a discipline, is a growing field that encompasses areas of design, organisational theory and practice, information and communication technology (ICT) and many others. The comprehensive, user-focused nature of Service Design facilitates the development of contextually relevant solutions to commercial, environmental and social difficulties. This aspect allows the designer, and/or facilitator the opportunity to engage meaningfully with users and communities in a responsible and transparent manner. The engagement context within Service Design projects must be considered to ensure that barriers to user engagement are identified and addressed. The user contexts relating to participation barriers are drawn from Gulliksen, Lantz and Boivie's (1999) identification of problem areas within user-centred design projects and observations from participatory and co-design sessions. This project explores the personal user context and potential participation barriers in relation to three open-access Service Design toolkits. The first titled 'Service Design Toolkit' was developed at the JAMK University of Applied Sciences, the second, titled 'Design methods for developing services' is by the British based Technology Strategy Board and Design Council and the third designed by Frog Design titled 'Collective Action Toolkit'.

Keywords: *Service Design, Participatory Design, Co-Design, Toolkits, User Contexts.*

Introduction

We use services every day of our lives, from being your own travel agent, to online banking services, and from mobile connectivity to virtual classrooms. Whether one enjoys a coffee at a favourite coffee shop or purchases goods online, you are participating in the combined delivery and consumption of services. The value of the service economy can clearly be noted when one considers the rise of the service sector in global gross domestic product (GDP). The estimated service contribution on world GDP in 2013 was 63.6%¹ and in South Africa, 68.4% (CIA, 2014). In 1997 Hodge had already noted the importance of services within the South African economy:

The Services sector has become one of the most important sectors in the South African economy as it has grown double the rate of manufacturing over the last three decades. There is a noticeable absence of serious economic analysis on the importance of the South African Services sector both to employment and export revenue. (Hodge, 1997:1)

Since 1997 research within the service sector has mainly focussed on the economic impact and exportable potential of services, as well as the relationship between services and manufacturing economies (Obinyeluaku and Sako, 2013). But what does economic sector analysis reveal about the

Service design thinking and user context as barrier to engaged participation

Service design shares core values with established design practices like user-centered design (UCD) practice² and universal design (UD)³. In all three design approaches - Service Design, UCD and UD - influential factors include holistic analyses of the situation, multiple iterations of the process, and users involvement. These factors help address the unique nature of every user (Moritz 2005:27). The level to which users are involved in the design process can vary from end-user testing (mostly beta phase) and feedback, to being immersed collaborative design partners (Abrams, Maloney-Krichmar and Preece 2004).

The comprehensive, user-focused nature of service design, and the unified link to various design approaches, makes Service Design methods appropriate for use in the development of contextually relevant solutions to social problems and systems. Service design provides traditional design practitioners with a single framework in which the needs of users can be identified, and social systems, relating to a design project, can be evaluated. This aspect allows the designer and/or facilitator the opportunity to engage meaningfully with users and communities in a responsible and transparent manner. This expanded view of design leads to four-level model of influence and impact; design of the physical product or artefact, design of user experience, design of systems around the interaction, and finally design of 'strategy, philosophy, policy or ideology' (Moritz 2005:33).

A focus on user needs and user participation within the design process does not automatically imply that users are active participants, nor that they engage fully. The engagement context within Service Design projects must be considered to ensure that barriers to user engagement are identified and addressed. A 1999 report by Gulliksen, Lantz and Boivie established a number of the earliest user participation criteria. The report summarises the findings of a number of papers presented at the workshop, "User Centered Design – Problems and Possibilities" held in Seattle, U.S.A. The main problem areas they noted within user-centred design projects include:

- Communication
- Conflicting goals
- Competence
- Attitudes
- Project organisation
- Work organisation
- Work activity
- Activities: Methods, techniques and tools

Subsequent authors noted many of the same, or similar, user considerations as important. Wallach and Scholz (2012) revisited a number of key participation considerations from Gould and Lewis' (1985) seminal work on design for usability. Three key aspects emerge from their work. The first refers to establishing an understanding of users instead of simply 'identifying, describing, stereotyping and ascertaining them'⁴, while the second urges designers to allow users to actively use prototypes in real world environments (Wallach and Scholz, 2012: 13). The third aspect refers to the importance of continuous immersed user involvement within an iterative process. Obstacles noted regarding users in relation to the phases of the design process⁵ include:

Design phases	User obstacles noted
Discovery Phase	<ul style="list-style-type: none"> Identifying appropriate users. Getting enough and appropriate users to join in the project. Users lacked information as to what the designers needed to know. Users lacked information as to what the design process meant. Not enough time. Users lacked confidence and were reluctant to talk to designers. Users ascribe different values and meanings to experiences and objects. Power relationships in the room affect how users participate.
Define Phase	<ul style="list-style-type: none"> Little consensus among users, the problem was finding compromises between groups. Users felt their views were not taken into account as the project progressed.
Develop Phase	<ul style="list-style-type: none"> Motivating users. Developers did not know how to engage users or how to obtain feedback from existing users. Users lacked confidence and were reluctant to talk to designers. Users did not always have enough time to assimilate and understand the models. Users did not feel that they could reflect on and explore topics/ practices gradually.
Deliver Phase	<ul style="list-style-type: none"> Users were unaware of implementation constraints. Users became less committed during further design iterations.

Table 1: A selection of user related obstacles noted in relation to design process phases. Adapted from, Kujala (2003:7)⁶

The importance of user participation is ingrained in many modern design practices, yet barriers to participation need to be explored and the altering role of the designer in co-design and participatory design sessions investigated. Findings from the ‘Dott07’ project propose that designers today operate within the following roles: co-creator, communicator, strategist, capacity builder, entrepreneur, researcher and facilitator (Tan 2009).

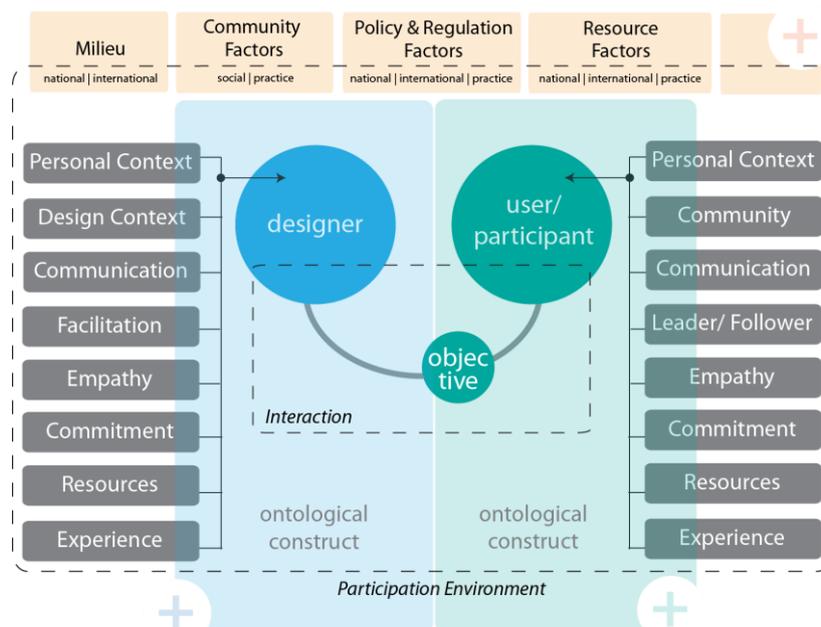


Figure 2: The complex realm of designer/user interaction

The interaction between the designer (acting within a multimodal capacity) and user is a complex process, which must be grounded in trust, open communication and goal oriented interactions (Figure 2). Through ethnographic in-situ observation and reflective user interviews the complexity of the interaction landscape was documented. Findings from three separate participatory and co-design activities were collated to visualize an interaction composite and user constructs (Figure 2). The three sessions included a variety of user contexts and scenarios⁷.

Gulliksen, Lantz and Boivie's (1999) user participation criteria, which relates directly to the user, correspond to findings from the sessions. These criteria were used to generate a series of probing questions, which may help investigate participation obstacles and possible point of interaction friction within design-user interaction and design based methods and tools.

User Participation Criteria	Complexity of user construct and main interaction influence	Analytical questions
<i>Gulliksen, Lantz and Boivie's (1999)</i>	<i>Observations from design and service design sessions (participatory and co-design)</i>	
Communication	Communication	Do I need to be literate to participate? Do I need to be an extrovert to be heard? Can I contribute through non-verbal communication?
Conflicting goals	Leader/Follower, Empathy, Communication	Will my opinion be registered? Do I need to agree with others to participate?
Competence	Experience, Personal context	Do I need to understand what design is? Do I need to understand what the design process is? Will the session acknowledge my personal/ professional experiences?
Attitudes	Personal context, Empathy, Commitment	Do I need to get along with others to participate? Do I need to listen to others to participate?
Work organisation, Work activity and Activities (user-user)	Leader/Follower, Personal context, Empathy, Commitment, Experience, Communication	Do I need to work well with others? Will I have to lead during the process? Will I have to communicate my opinion? Do I need to be literate to participate? Will the activity acknowledge my personal/ professional experiences? Do I need to agree with others to complete the tasks? Do I need to finish in a set time?

Table 2: Questions to investigate potential individual user participation obstacles⁸

The questions stated above aid in the analysis of design tools that are grounded in user-centered design practice.

The nature of service design toolkits and the South African complexity

Service design toolkits offer the professional designer and non-design facilitator the opportunity to use, and in some cases edit, pre-developed tools. These tools take the facilitator and user through a range of activities to accomplish a predefined (design) goal. Toolkits may offer a plethora of engagement opportunities but do they address the personal user context, or the diversity that characterises countries like South Africa? Most design and service design toolkits and resources have been

produced in Europe and America. The three toolkits reviewed in this paper are free and easily accessible⁹. The first is the *Service Design Toolkit* was developed at JAMK University of Applied Sciences (Finland), the second, titled *Design methods for developing services*, is by the British based Technology Strategy Board and Design Council and the third, *Collective Action Toolkit* is by Frog Design. The toolkits share similar structures with project phases containing various tools from which one can choose. The design phases and individual tools are identified in Table 3.

Toolkit title	Phases	Individual Tools & Activities in each phase
Service Design Toolkit By JAMK University of Applied Sciences - comes with a basic outline of facilitation and description of phases and activities.	Define	2 Tools: 'Customer service pathway', 'Research questions and methods'
	Learn	4 Tools: 'Customer service pathway', 'See through customer eyes', 'Customer value', 'Customer behaviour models'
	Solve	2 Tools: 'Forming ideas', 'Evaluating and prioritising'
	Test	2 Tools: 'Prototype', 'Business model canvas'
Collective Action Toolkit By Frog Design - comes with a detailed and comprehensive outline of facilitation and description of phases and activities.	Goal	4 Activities: 'Ripple Effect', 'Define your problem', 'Find true north', 'Check your goal'
	Build	4 Activities: 'Skill share', 'Knowledge hunt', 'Who inspires us', 'Rings of connection'
	Seek	4 Activities: 'Find issues, uncover needs', 'Interviewing 101', 'We saw, we heard', 'Pattern quest'
	Imagine	4 Activities: 'Jam session', 'Idea remix', 'Grow an idea', 'Cull the set'
	Make	5 Activities: 'Storyboarding 101', 'Lights, camera, action', 'Write a blurb', 'It's like, it's not like', 'Prototype it'
	Plan	4 Activities: 'Setting an agenda', 'Divide and conquer', 'Set a timeline', 'Keep momentum'
Design methods for developing services By the British based Technology Strategy Board and Design Council - comes with a detailed and comprehensive outline of facilitation and description of phases and activities.	Discover	4 Tools: 'User journey mapping', 'User diaries', 'Services safari', 'User shadowing'
	Define	3 Tools: 'User personas', 'Brainstorming', 'Design brief'
	Develop	3 Tools: 'Service Blueprinting', 'Experience prototyping', 'Business model canvas'
	Deliver	1 Tool: 'Scenarios'

Table 3: Process phases and individual tools/ activities¹⁰

The phases, tools and activities identified in Table 3, aim to take the facilitator¹¹ and session participants through a creative problem solving process. Professional or experienced design process facilitation plays an integral part of this process, however - if this presence is removed from the session, do toolkits address the complexity of user context during interactions? In South Africa diverse user context is influenced by the number of cultures and ethnic backgrounds found within the country¹² According to the 2012 General Household Survey (GHS) conducted by Statistics South Africa (StatsSA), the adult literacy rate in South Africa is almost 93% (Statistics South Africa, 2012). However this percentage was generated by self-reported data and is based on the ability to read and write short sentences. In truth the level of adult literacy may be much lower. Added to this, literate users in South Africa display varying levels of information and digital literacy. Given this diversity, the participation of users in Service Design workshops, to investigate social situations and problems, may be marred by a range of personal contexts and possible feelings of inadequacy. To reflect on interaction barriers and the flexibility to take multiple user contexts into account, within the tools and activities (of the above-mentioned phases in the toolkits), the user participation criteria from Table 1 were applied to each toolkit's process phases (Table 4).

Discussion and conclusion

This paper aimed at exploring points of friction and user participation barriers within three design toolkits. From observations and analyses of activities within the toolkits, against user participation criteria, the biggest challenges noted are the levels of literacy required to complete the tasks, the (unstated) reliance on a competent facilitator and unconsidered questions around group work and collaboration.

	Toolkit		Service Design Toolkit				Collective Action Toolkit						Design methods for developing services			
	Activity Type		Define	Learn	Solve	Test	Goal	Build	Seek	Imagine	Make	Plan	Discover	Define	Develop	Deliver
	Activities No.		2	4	2	2	4	4	4	4	5	4	4	3	3	1
			Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Communication	Literacy?		X		X		X		X		X		X		X	
	Extrovert?			X		X		X		X		X		X		X
	Non-verbal comm?			X		X		X		X		X		X		X
Conflicting goals	Opinion noted?		X		X		X		X		X		X		X	
	Agreement?			X		X		X		X		X		X		X
Competence	Design process?			X		X		X		X		X		X		X
	Personal/prof experiences?		X		X		X		X		X		X		X	
Attitudes	Get along?			X		X		X		X		X		X		X
	Listening?			X		X		X		X		X		X		X
Organisation & Activities	Collaborate?			X		X		X		X		X		X		X
	Leadership?			X		X		X		X		X		X		X
	Opinion?		X		X		X		X		X		X		X	
	Literacy?		X		X		X		X		X		X		X	
	Personal/prof experiences?		X		X		X		X		X		X		X	
	Agreement?			X		X		X		X		X		X		X
	Time limit?			X		X		X		X		X		X		X

Table 4: User context acknowledgement within toolkit process phases' tools/ activities¹³

All three toolkits offer design professionals and non-designers the opportunity to use the toolkit, to address problems or challenges within a corporate environment or for social development. A problem may arise though if the facilitator of the session does not have a background in design (or in design process facilitation), as processes and terminology from all three toolkits are imbedded in design practice. The focus on written activities and explanations does not support groups of participants who are illiterate or who struggle with the language and jargon of the toolkit. Although one of the toolkits (the Collective Action Toolkit) offers simple and accessible illustrations in addition to written content, the overwhelming majority of information and activities require participants to be literate. This situation could be addressed through improvisational facilitation, which translates written activities into verbal, oral and physical representations, but that would require an experienced facilitator (ideally with design process experience). An experienced facilitator would also be needed to monitor and action group work and collaboration. The toolkits assume that the process will benefit from user collaboration and group work but offer no guidance regarding group conflict or a user's resistance to communicate if gender, cultural or religious characteristics impact on the group's ability to collaborate.

In conclusion, all three toolkits translate complex design processes into a manageable project and enable the creative exploration of a problem or challenge. As resources, these toolkits offer a wealth of opportunity and could expand the reach of design as a tool for social interventions, creating sustainable systems of development. The idea, however, that toolkits can be used by anyone, anywhere is flawed – not that any of these toolkits claim this directly. For countries with complex, non-homogenous communities, like South Africa, design activities and toolkits require adaption and detailed facilitation guidelines to reach their full potential.

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Endnotes

¹ The estimated global GDP, by sector, in 2013 consisted of agriculture 5.9%, industry 30.5%, and services 63.6%. In South Africa the 2013 estimated totals were agriculture 2.6%, industry 29%, and services 68.4% (CIA, 2014).

² "UCD is a design philosophy that emphasizes the importance of considering the end user's needs, goals, and desires when creating products or services" (Putnam, Rose, Johnson and Kolko, 2009: 51)

³ The term "Universal Design" has evolved from "Barrier Free Design", "Accessible Design", "Transgenerational Design", and "Adaptable Design". It is now considered to be synonymous with "Design for All" and "Inclusive Design."

⁴ Quoted from (Gould and Lewis, 1985:300).

⁵ The process explored in this project is the Design Council's Double Diamond process. Phases include *discover, define, develop and deliver*.

⁶ This table draws on research completed by Grudin, 1991; Wilson, Bekker, Johnson and Johnson, 1996; Wilson, Bekker, Johnson and Johnson, 1997; Kujala, 2006. It does not reflect a definitive list of user obstacles but rather offers a selection of problems and obstacles encountered.

⁷ All sessions were documented through user notes, facilitation notes, session generated materials and reflective questionnaires. Sessions ran between May 2013 and May 2014. Session 1 included 14 participants (8 male and 6 female) from a corporate background participating in a workshop around brand development and revitalisation. Session 2 included design lectures and teachers working together to redefine design education practice (the session included 3 male and 5 female participants). The third session included 18 youth participants from disadvantaged areas in Kimberly working to define and conceptualise improved services in their communities.

⁸ The questions only highlight the level to which interactions or tools address complexity within user-user interaction and the individual user constructs. Problematic facilitation or operational challenges are not addressed through these questions. It is important, however, to note that both user-user and user-designer interactions should be considered to form a holistic view of the participation environment. User-user interaction and user construct are only two facets of understanding the participation environment.

⁹ The *Service Design Toolkit* developed at the JAMK University of Applied Sciences can be downloaded from: <https://www.innovateuk.org/documents/1524978/1814792/Keeping+Connected+-+Design+methods+for+developing+services+%2528Archive%2529/d358586d-80b3-4f1e-b753-16750434829d> *Design methods for developing services*, by the British based Technology Strategy Board and Design Council can be downloaded from: http://sdt.fi/download_toolkit.html The Frog Design toolkit, *Collective Action Toolkit* can be downloaded from: <http://www.frogdesign.com/work/frog-collective-action-toolkit.html>

¹⁰ Due to the limited number of words, terms and processes within the toolkits are not explored.

¹¹ Who may or may not be a design professional.

¹² This diversity includes: Ethnic composition of South Africa's 51,8 million people, is 79,2% African, 8,9% coloured, 2,5% Indian and 8,9% white. More than 23 religions are practiced within country. Approximately 51,3% of the population is female. There are 11 national languages.

¹³ For each user participation criteria, the questions in Table 3 were asked - resulting in a numerical yes-no result for each toolkit/ activity.

THE ROLE OF ACTIVITY THEORY AS A REFLECTION TOOL IN PARTICIPATORY DESIGN PRACTICES

Rael Futerman

Cape Peninsula University of Technology

Abstract

This research paper explains the role of an Activity Theory (AT) framework as an analytical tool in the field of Participatory Design (PD). It uses a case study based in a collaborative design project focused on early childhood development (ECD). AT provides a broad theoretical framework for describing the structure, development, and context of human activity, in this case collaborative design. Several key principles help frame activity systems, these are the hierarchical structure of the activity system, its object-orientedness, the internalisation and externalisation of activities, tool mediation, and development. Participatory Design is essentially a collaborative, object-oriented activity system. By framing PD in this way, one can gain a more insightful overview of the process at different points. AT can be used beforehand as a planning tool, during as a monitoring tool, and after a project as an evaluation tool. PD as an activity system comprises of subject/s, mediating tools and artifacts, rules and regulations, the broader community within the context, and the division of labour, all linked and aimed at achieving a certain goal/objective. The use of AT as an evaluation tool after a collaborative project can help explain and unpack the design process, and can provide designers with useful information for future PD projects.

Keywords: *Participatory Design, Activity Theory, Critical Reflections, Design Storm, Co-design.*

Introduction

The project presented in this paper was the focus of a recent Design Storm. Design Storming is a platform for inclusive and participatory design, focused on addressing issues of social significance. It uses design to promote collaboration, raise awareness, and develop open-source ideas and interventions, which can serve as a catalyst for change. This Design Storming event was conceived in collaboration with local NGO's, Ikamva Labantu and Equal Education, who provided the context for the project. The object of the collaborative activity was driven by the question, how do we make sure our early childhood development (ECD) programmes are as effective as they can be?

Activity theorists assign object status to physical, social, and cultural phenomena, including nonmaterial phenomena such as expectations and affinities¹, with human activity being directed toward two types of objects, things and people. In this case the question focused on two main objects of ECD: *access* by those in need, and, *integration* into current social practices. This research paper presents an AT framework adapted for critical reflection of collaborative design practices, important in understanding actions, thoughts and procedures and their contributions in the definition of the final design outcome. This reflection can contribute to future collaborative activities through a more thorough understanding of the activity of co-design.

Defining the Framework

Participatory Design (PD) aims to include end users and other stakeholders in the design process from the outset, with participants determining the direction of the project as a collaborative group. Here we see a meeting of the user-expert, with tacit, experiential knowledge of the context, and the designer, familiar with design methods and practice. PD practitioners believe that, politically and ethically, the gaps between participants tacit knowledge and designers abductive thinking needs bridging, with both forms of knowledge as equal as the other. A critical reflection on 'what is' can inform and improve 'what could be'. Collaborative design practices often involve multiple stakeholders, usually from quite different backgrounds. It becomes increasingly important to find a common theory that facilitates collaboration within and between these heterogeneous groups. Blunden (2010:170) draws from Davydov (2008) and states that 'activity' could provide a common theoretical foundation across disciplines, facilitating critical appropriation of insights from other disciplines and providing overlapping, conceptual tools for all stakeholders to use.

Activity Theory (AT) provides us a lens to critically reflect *on* and *in* design processes. It facilitates the identification of components of an activity system, in this case a participatory design system. Design research can make use of the AT framework by facilitating explorations into situations, contexts and motivations, not only related to human-artefact relationships, (Sato, 2009:34) but also their place in their located socio-technical and economic environments. Activity is an interdisciplinary concept by nature, and analogous to what Heidegger and later Gadamer termed, the 'hermeneutic circle' (Blunden, 2010:170). This refers to a relationship between the whole and its parts and how each can only be understood in relation the other. Concerning the relationship between individual actions and collective activity, Gadamer viewed understanding as linguistically mediated. He believed that it is through conversations with others that reality is explored and an agreement is reached, developing a new, common understanding. The centrality of conversation to the hermeneutic practices was taken further by Donald Schön (1987), who characterizes design as a hermeneutic circle that is developed by means of "a conversation with the situation". In AT this 'conversation with the situation' results in individuals acting toward an object(ive), these actions being mediated by physical, cultural and mental tools (Clark, 2012:2). Figure 1 presents Engeström's mediated action triangle. The *subject* represents an individual or group engaged in the activity. The mediating *tools* can be artefacts, signs, social others, and prior knowledge that the subject/s engage with in their experience of acting on the object. The *object* is the goal of the activity and drives the actions of subject/s and their choice of tools.

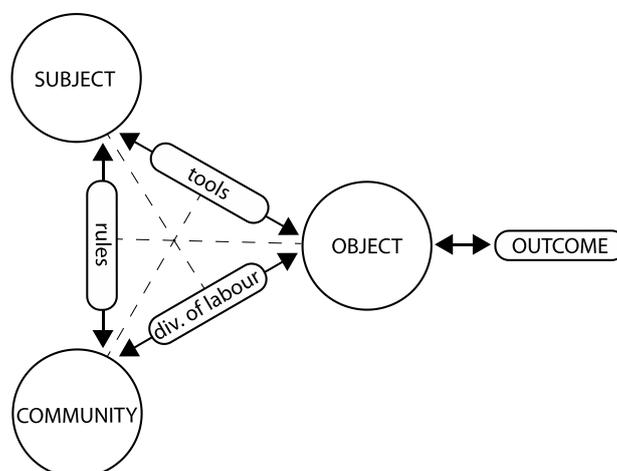


Figure 1 Adapted version of Engeström's model of activity (1987)

The Participatory Design Activity Framework

This Participatory Design Activity Framework (PDAF) (figure 2) is based on the Cultural Historical Activity Theory (CHAT) model. It draws on key themes and classifiers of CHAT and PD and presents them in a way that aims to facilitate critical reflection of collaborative design practices. It is continuously being developed, and is presented here in its current form. An explanation of the framework is as follows:

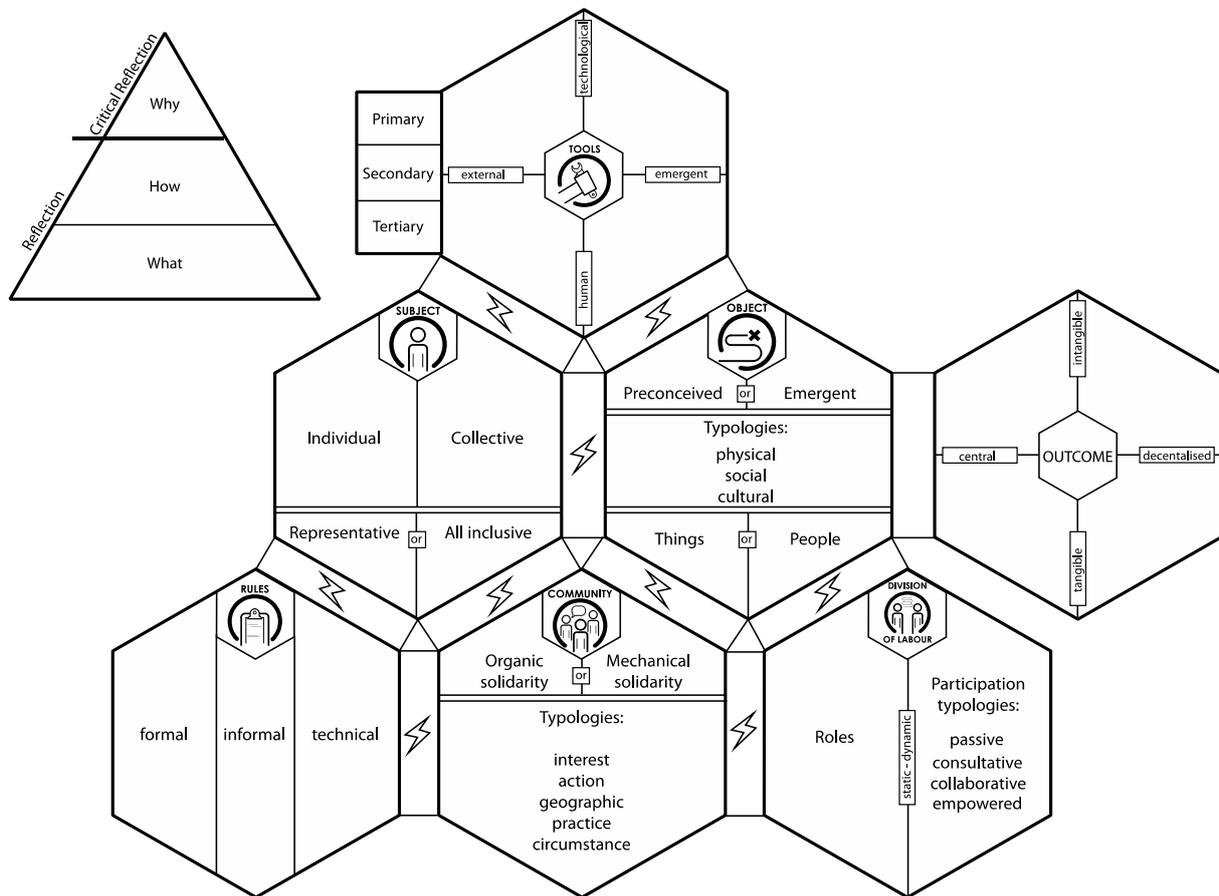


Figure 2: Participatory Design Activity Framework (PDAF)

Subject

This facet identifies who is directly involved in the activity. The subject can either be an individual or as is the case in PD, a group of people. This group can either be made up of representatives of the greater community, or can be all-inclusive. This depends on the size of the community and the capacity or structure of the project. Representation will be addressed in the discussion around the *division of labour* component.

Object

The object, or objective, is the reason why individuals and groups of individuals choose to participate in an activity (Kaptelinin et al 1995:192). It can be the goal or motive that drives the activities of the co-design group, or the material product that participants try to gain through an activity (Yamagata-Lynch 2010:17). It can either be preconceived or it can emerge through critical reflection by the group. Members usually come from different contexts and therefore often have different understandings of the object. Knowledge sharing within the group can help build a cohesive, collective understanding of

the object, taking into consideration all viewpoints. Human activity is directed towards two types of object, 'things' or 'people'. Objects can be physical, social or cultural (Clark 2012:2).

Tools

Mediating the subject-object relationship are technical tools, *artefacts*, and psychological tools, *signs* (Yamagata-Lynch 2010:16). These technological and psychological tools can either be brought into the activity or emerge through the activity of co-design. Examples of artefacts include co-design toolkits, prototyping materials and computers, to name a few. An example of psychological or human tools is language. Wartofsky (1979) presented three levels of mediating tools, namely: *primary*, tangible, external or physical; *secondary*, internal, semiotic or mental; and *tertiary*, schematics where mind and culture act together such as environments or ecosystems. Clark (2012:2) has a similar classification, labelling tools as *physical*, *mental* or *cultural*. These classifications help us identify and code the types of tools used in PD practice.

Community

Community, along with Tools, mediates the subject-object relationship. Communities are made up of people who share the same beliefs, interest, practice, activity or geographic location, or who are brought together by outside circumstances. Communities hold elements of both shared and personal tacit knowledge, which arise from experiencing the elements that unite them. For example, those living in close proximity will have knowledge of the area that is shared, such as weather patterns, but will also have personal experiences. *Communities can also generally be classified as organic or mechanical. Durkheim introduced the terms "mechanical" and "organic" solidarity as part of his theory of the development of societies in The Division of Labour in Society (2014). Solidarity here refers to the ties in a society that link people together. Mechanical communities are fairly homogenous, with individuals sharing the same beliefs or type of work, this like-mindedness facilitating cohesion of the group; whereas organic communities find their cohesiveness in differentiation, and the interdependence that comes from specialization.*

Rules

The rules and conventions that constrain activity systems can be divided into *formal*, *informal* and *technical*. Formal rules are systematic, general and expected, i.e. they are predetermined and can relate to policies and laws governing the community. Informal rules can be idiosyncratic and arise from the communities' beliefs and practices or the collaborative activity itself. Technical rules relate to the use of tools, and embody inherent sanctions important in supporting required actions. Formal rules refer to the external context in which collaboration takes place, while informal rules arise from the collaborative practices and people involved.

Division of Labour

The division of labour mediates the relationship between the object and the community, and provides for the distribution of actions and operations among the community. The focus is on who does what. The roles that people are given or that they adopt during a co-design workshop can either remain static, for example the facilitator might stay the same throughout, or be dynamic, for example community members adopting the role of designer. Dynamic roles and relationships evolve during the workshop and cannot necessarily be predetermined. Participation itself can however be determined by what type of participation is taking place, and generally falls into one of the following typologies, passive, consultative, collaborative or empowered.

The participatory design activity framework in action

Presented below is the framework as it was used in reflection on the ECD Design storming project. It was used in this case as a tool for reflection-on-action, with the reflection happening after the event, and in this case between multiple members of the project. Below are the findings that emerged through the reflection mapping.

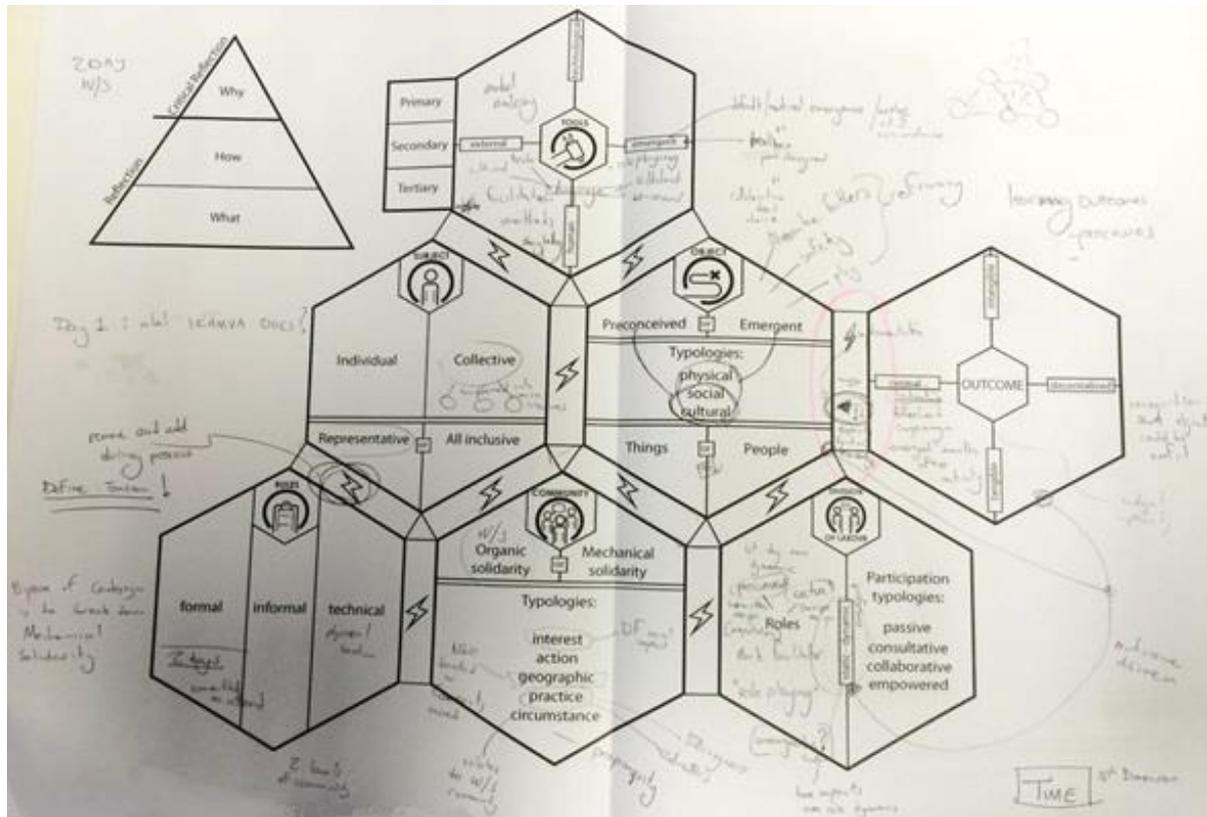


Figure 3: Participatory Design Activity Framework (PDAF) in practice

Subject

The subject in the ECD project was a multidisciplinary, collaborative group comprising of teachers, designers, community members and other interested parties. In this case the subject was a collective representation of those involved in ECD in that community. During the workshop the large single group began to split and form into micro-collectives, focusing on the emergent themes. When groups formed micro-collectives, cross-pollination of ideas was encouraged. This was done through ongoing short presentations by each group, for input by the rest of the larger group.

Object

The initial object of the project was closely linked to preconceived, social and cultural aspects of early childhood development. We saw this shift slightly through the workshop and the idea of physical objects emerged. The preconceived themes of *access* by those in need, and, *integration* into current social practices were unpacked and reframed during the workshop and the objects of the project that began to drive the design process were around absentee fathers, safety and play. Physical objects that began to drive the co-design group were a campaign around absentee fathers and; a physical structure built in a local park adjacent to a school where community members could go for classes or meetings, the goal of which was twofold, skills development and safety through presence.

Tools

A blended set of predetermined and emergent tools was used in this workshop. During reflection on the workshop it was identified that roleplaying emerged as a tool to break the ice and include participants unfamiliar with certain practices related to ECD. It was also noted that emergent tools could be subdivided into two categories, *natural emergence* where tools are developed during the process and out of circumstance, as well as *selected emergence*, where existing tools can be cherry-picked throughout the process, like a toolbox.

Roleplaying and acted out skits facilitated collaborative framing and learning. These involved a blend of human and technological tools such as language, narrative and props. Model-making was also a tool used during the design process. Learning from this workshop we saw the importance of phased tool use. It was noted that collaborative framing and reframing of the problem through roleplaying should happen before model making or drawing, due to the fact that physically representing a problem too early on can limit exploration of problems. This can be combined with mapping to present the underlying problems both through action and visualization. Language is an imperative tool in deliberative design practices, and it was noticed that people from different backgrounds have certain ways of framing issues related to ECD. We saw a shift from individual (technical, cultural, professional) language to an emergent, common language.

Community

There are nested communities that mediate between the children and their object of learning. The immediate community is one of practice and includes the teachers, the second is a geographic community made up by the greater community of Khayelitsha. A benefit of introducing a multidisciplinary team to work with teachers and community members is a shift from mechanical to organic solidarity. This blend of new knowledge and experiential knowledge combined with a design thinking approach allowed the problem to be reframed and presented new approaches to tackling issues related to ECD. An additional type of community was suggested during the reflection session, this being *Propinquity*, this suggests a community forming around a place and time.

Rules

Rules included a two-day, in-situ commitment to the workshop, with all participants needing to be present during this time. The facilitator introduced certain rules too, mostly related to supporting democratic deliberation.

Division of Labour

During reflection on the roles people played during the workshop, time was found to be a contributing factor to role allocation. For example as the end of the workshop approached and possible directions and outcomes were needed, designers became less facilitative and more direction oriented, driving the participants toward an outcome. The only role that stayed constant was that of the facilitator, this was made easier by defining his role as outside of the process, where his main tasks were to keep time, suggest next steps based on group findings, and support democratic practices.

Another interesting finding was the tension between *perceived* and *actual* roles, the difference between how others see you, versus how you see you. The role of outsider-expert had to be dealt with early on in order to encourage community participants to engage more. It is important for facilitators to define roles and expectations at the outset, noting however that roles can be dynamic.

General findings of the reflection

Below are findings based in this initial reflection on a collaborative design project and are drawn from discussions between the participants:

- Remove 'tension' markers from the framework and draw them in according to each reflective session;
- Include 'Propinquity' as a community typology;
- The tool helped define the what, who and how, however the why needs to be deliberated on in further discussions. This is where true critical reflection and learning takes place.

Conclusion

This paper introduced the Participatory Design Activity Framework (PDAF) as a tool for the critical reflection of collaborative design projects. The implementation of the PDAF in the early childhood development co-design example presented here, represents engagement with stakeholders after a project to reflect on the conditions, goals and motives that contributed to collaborative design outcomes, facilitating continuous learning and contributing to future collaborative projects. Further research will interrogate the PDAF use as a tool for reflection *in action*, which will allow deeper exploration into why certain actions are being taken as they happen, presenting a more dynamic activity mapping.

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IS SOUTH AFRICA HAND-MADE? EXPLORING POSTCOLONIAL REPRESENTATION IN THE GRAPHIC DESIGN OF THE CONSTITUTIONAL COURT OF SOUTH AFRICA

Ryan Honeyball

Greenside Design Center

Abstract

My research is intended to question the way in which South African producers of visual culture, specifically graphic designers, represent not only themselves, but also their clients and the larger South African communities. By exploring attempts by a celebrated South African designer to create a “new” South African visual language, and by comparing the results of these experiments to the writings of critics and theorists such as Achille Mbembe and Clive Kellner, I feel I am able to identify core visual clichés or tropes which popularly define the South African identity abroad. Much of my research centres around what Kellner (2007: 22–25) calls “...the essentialist stereotypical view of what constitutes Africa and its imagined lack of technological sophistication.” Much of the West still views Africa as primitive and unchanging. The inclusion of humanism is expected from the graphic work of South Africans, often resulting in the glorification of hand-made or craft objects. To further explore this notion of the hand-made (or at least seemingly hand-made) as an identifying trait of South African authenticity, I will engage with the typographic work of Garth Walker at the Constitutional Court of South Africa.

Much of my research is situated around similar research in the field of Art, but as design is often differentiated through its role as a direct service to a larger audience, I must ask what relevance the creation of a democratic South African visual language has to both client and audience? The employment of stereotypes in international representations is condescending towards South Africans. But does its service as an effective means of exotifying the country for a foreign audience justify the means? Or does this falsified version of South Africa fed to the West do more harm by acting for “historical” colonisers?

Keywords: *postcolonial, representation, identity, hand-made, typography, authenticity, exotification.*

Introduction

Unlike the fine arts, graphic design is what Pierre Bourdieu (1993) calls a “field of large-scale cultural production”. Graphic design objects are managed as economic goods destined for consumers. Their value lies not in themselves as objects but as a means of promoting the symbolic value of the client’s product, service or brand. It has a direct influence on popular culture and perceptions through the creation or propagation of languages, visual and linguistic. However, graphic design can also be a service to its audience through systems aimed at creating organization. Michael MacGarry (2008:9) describes it as “an elastic, slippery mist that drives those engaged in its murky joys to change the world as they see it. To re-articulate the materiality of their context with the intent firstly of

communicating ideas and languages, and secondly of offering systems, patterns and models for viewing the world—allowing others to understand what they are looking at and where they are.” As a case study I would like to discuss Garth Walker’s typographic work for the Constitutional Court of South Africa. The court has managed to construct a successful and coherent brand which is representative of its ideals of accessibility, transparency and humanism. This is achieved through the careful consideration of all visual elements including architecture, graphic design and a large collection of art. In order to visually display the human nature of the court it has adopted a decidedly hand-made aesthetic. The court’s logo (Figure 1), although rendered with computer software, is reminiscent of a crudely hand-carved wood block print with its sharp angles and naïve renditions of human forms on either side of a sheltering tree—the icon is called *Justice Under a Tree*, a visual metaphor for the protection the court is meant to provide. The entrance to the court building features two massive hand-carved wooden doors to the left of which are the words “Constitutional Court” written in all eleven of South Africa’s official languages, each in a colour taken from the South African flag (Figure 2). The typeface is custom made for the court by Garth Walker and based on “documented Apartheid era prison cell wall graffiti” (Walker 2008). The characters have each been largely altered to increase legibility and to create a coherent and consistent typeface. This was achieved through the use of a grid on which each letter was constructed (Figure 3). Regardless of the technical construction of the typeface, a degree of humanism is maintained in its appearance and character through varying line weights and irregular forms. The typeface reflects the open and transparent nature of the court effectively and is a well considered, eloquently executed graphic device, which is easily distinguishable and suited to its purpose as a display typeface and branding element. However, in this paper I would like to focus on the typeface’s role as a signifier of South African design and aesthetics, which may not be an explicit function of the typeface, but which I feel is nonetheless expressed implicitly. The typeface does as MacGarry (2008:9) suggests design should by “allowing others to know what they are looking at and where they are.” But I would like to question whether these perceptions of what one is looking at or where one is are based in the colonialist perceptions of Africanness, or whether it is a true reflection of the South Africa around Walker.



Figure 1 Carolyn Parton, Constitutional Court of South Africa Logo, 2004. Vector illustration. The Constitutional Court of South Africa, Johannesburg.



Figure 2 Garth Walker, Constitutional Court Façade, 2004. Laser-cut mild steel and enamel paint. The Constitutional Court of South Africa, Johannesburg. (MacGarry 2008:152)



Figure 3 Garth Walker, Constitutional Court Identity Typeface, 2004. Booklets. The Constitutional Court of South Africa, Johannesburg. (MacGarry 2008:152)

Is South Africa hand-made?

Garth Walker and his previous studio *Orange Juice* are well known in the graphic design industry. They have won numerous awards and have been featured in publications both nationally and internationally. Walker is probably best known through his participation in *iJusi*, a graphic design magazine started with the aim of creating a “new” South African visual language (Walker 1995). *iJusi*

and *Orange Juice's* aesthetic was based on what Walker describes as South Africa's informal visual vernacular (2008:26). Walker (2006:23) explains his process and theory:

For every personal action there is a communal reaction. And vice versa. These actions are described in a powerful new visual language that everybody can understand. It mixes icons from the past and borrows from different cultures, blending them all into a new brother and sisterhood. It is a visual language that starts on the streets and ends up in glossy magazines on coffee tables.

There are multiple influences present in Walker's work, which displays elements of both contemporary and traditional South African imagery drawn from encounters and interactions in Walker's daily life in Durban, a place, which according to Elena Stanic and Corina Lipavsky (2009:166) in their introduction to Walker's work, is "the most cosmopolitan city in South Africa". These influences are present in the court typography where technology has been utilized to create something that has the appearance of being hand-made. This hand-made aesthetic is a continuation of the themes that have been discussed by Kellner relating to issues of representation of African identity. The process is technologically advanced, yet the product receives a veneer of naivety, of hand-craftedness that recalls Western ideas of an "unchanging Africa". The difference here is that this perception of Africa has been created, not by a Westerner or for Western consumption, but is instead based on the experience and perception of a designer who has lived in South Africa his whole life, and who has made an effort to observe the culture around him in order to create a reflection of South African society in his own work. He observes the migration that Mbembe speaks about in his *Afropolitanism* and takes into account the multiple cultures present in South African cities as a result of an influx of immigrants and refugees to the "Rainbow Nation" (2008:25). It is these multiple cultures that he observes on the streets through informal trade in areas of motion and movement like bus depots and taxi ranks (ibid:26). He also acknowledges the poverty and desperation present, and regards these, as well as increasing specialization and intense competition, as major contributing factors to the hand-made signage and typography that influence his work (ibid). These signs are produced in this way not because the sign writers or their customers have little understanding or education, but because this aesthetic is accessible to them and functions in its context. These graphic works are the result of the desperation that is observable in South Africa, but they are also a celebration of African humour and spirit (ibid).

But there is also an element of the exotification that Graham Huggan (2001:28–33) and Bernadette van Haute (2008:22) speak about in relation to the postcolonial exotic present in Walker's work. Walker (2008:25) states that "African street typography" and "African vernacular type" are still dismissed as "crude" and "unsophisticated" by Western designers. This judgement is relative to the expectations one has of typography and its function in society and demonstrates the failure of multiculturalism through the validation of African work based on formal criteria set out by Western viewers. Walker (2008:26) describes the conditions for this typography vividly in his essay *Design in the African Context*:

African street sign writers have an infatuation with type and thus street graphics have reclaimed territory that the professionals have long forgotten. There is no Helvetica here... Since competitors are within an arm's length, type has to attract the attention of potential customers. It plays with perspective and compels customers to come closer and take a look. It shouts its message, demands attention and dares one to smile.

Absent too is the minimalism that is so fashionable in contemporary graphic design. On the streets the spaces are pillaged and every gimmick is used to full effect.

In the paragraphs above Walker uses differentiating language, he compares “street typography” with more formal typography and is, in a sense, differentiating between Africa and the West. Importantly he raises the issue of context and function and positions them as more important than formal considerations of macro elements such as composition and micro elements such as kerning. He believes that differing contexts will yield differing results and that difference should be celebrated. This celebration of difference and the resulting comparisons are exotifying, just as Western judgements of African aesthetics are exotifying. However where Western exotification is seen as an act of colonial dominance, van Haute (2008:24–25) believes this postcolonial exotification to be emancipatory.

The centres of consecration are still situated in the Northwest and therefore the criteria on which graphic design is judged originate in the history of Western design. As Rasheed Araeen (2000:7) points out, the structures of dominance are still in place only now we are led to believe that postmodernism allows for multiculturalism. Walker’s design is awarded and consecrated on the basis of his attempt to exotify Africa through its own vernacular, which is removed from and rejects the formal qualities of Western design practice. By doing this he facilitates an easier acceptance of African design for the West. However Walker’s work at the constitutional court is not produced for a Western audience, it has been produced for a South African audience and although the hand-made aesthetic acts as an African shorthand for Westerners it is based in a local context and therefore resonates and functions well for a South African audience as well. Western expectations of a technologically illiterate Africa are being reflected in work created in order to define a South African visual language by a South African designer and the result is both effective and relevant. Walker’s observations of a lack of technology in South Africa are not due to Western ideas of a static nation that is primitive and reluctant to change, they are instead reflective of the reality of the digital divide in the developing world.

In his essay *Notes From Down South: Towards Defining Contemporary African Practice* Clive Kellner (2007:25) writes that African cultural producers are as influenced by new technologies and the Internet as their Western counterparts. I would agree with this statement in relation to the field of cultural production. I would, however, question the statement’s reflection on the rest of African societies who, regardless of the field, create and participate in cultures of their own as demonstrated by Walker’s observations of “street typography”. There is a noticeable difference between the output of formal and informal producers in the presence of technology, or lack thereof. Graphic designers specifically need a high degree of technological literacy in order to compete in the changing design landscape. So the technological processes and global communicative influences that Kellner sees in contemporary African artistic production unfortunately don’t seem to be as present in a large section of South African society. Perhaps this could be a result of Kellner’s overlooking of issues of technological accessibility, literacy and therefore cultural representation. Last year Statistics South Africa (2013:35) released its *General Household Survey*, which showed that just 41% of South Africans have access to the Internet (and only 10% have regular access at home). This places South Africa 5th on the continent for Internet access and 92nd in the world. This means that under half of the population of South Africa is able to represent themselves directly through what is fast becoming the world’s most dominant communicative technology. When one considers the implications for the other countries in Africa that place below South Africa, the realization of the idea of an Africa connected to the rest of the world seems distant. The ability to be part of the field relies heavily on *habitus* (Bourdieu 1993) or context

relating to one's social class, personal history and education. Given that there is a real and influential class division in South Africa this means that in order to access the tools and support needed to pursue a career in cultural industries, one must be able to access the education and technologies needed for production. These are expensive in South Africa, which means that many of the previously disadvantaged (more often than not continually disadvantaged) have little access to these industries.

Conclusion

While I do not feel there is any one way in which to represent South Africa's visual culture I do feel that Garth Walker's attempts at creating an effective language incorporate relevant visual cues. His typography at the Constitutional Court displays a contextual sensitivity and reflects elements of contemporary South Africa that do not rely on the self-referential language of most work within the field. I would not suggest that the work at the Court is completely free of colonial expectations and limitations. Walker is a trained designer and as such is aware of the criteria used to evaluate design work and so, in order to be accessible to a larger audience he does not completely revolt against Western design standards. This does not however, hinder his ability to communicate effectively to his primary local audience. The work is able to "allow others to understand what they are looking at and where they are" using, what Walker is sure to be aware of, are Western perceptions of South Africa. Where Walker is most successful is in his ability to cater to those perceptions through the use of real and relevant South African influences. I do not think Walker's work is free of a colonial tint, however I do feel there is validity in his use of a "hand-made" aesthetic in combination with a highly technological process in communicating effectively.

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NOT ANOTHER SPACE SUIT: A CONCEPTUAL HYBRID DESIGN FOR THE FORGOTTEN MASSES

Alia Khairat

Virginia Commonwealth University Qatar

Thomas Modeen

Virginia Commonwealth University Qatar

Abstract

Unseen, unheard and unconsidered, Qatar's migrant worker population builds one of the richest countries in the world. Constituting more than half of Qatar's work force, they have recently become the center of much international debate, debate triggered by the upcoming 2022 FIFA World Cup event that Qatar is hosting. There are, however, piecemeal efforts in Qatar to improve the workers' conditions. One of these efforts proposes a hybridized design that uses a variety of interlinked factors. Currently, the workers labor in Qatar's hot, humid cities wearing rudimentary workwear. Cramped and unhygienic living conditions and 60-hour workweeks only exacerbate the issue. As a result, hundreds fall victim to heat stress between the months of March and August. Since clothes affects the rate and efficiency with which heat is exchanged between the body and its surroundings, a concept suit was designed to improve thermal comfort. Low-tech, indigenous heat management systems (such as henna tattoos) are combined with new technologies and knowledge of human physiology to design a two-layered suit that aims to optimize heat exchange. The suit protects from heat radiation and enhances convection, conduction and evaporation by using strategically placed vents, perforations, and Phase Change Material (PCM) packs. Using fiction as a means of social commentary and critical design, the concept suit borrows from the superhero aesthetic. The muscular suit symbolizes the superhuman feat these workers perform and capitalizes on the empowering effect of uniforms. Improved functionality coupled with a heroic form should trigger confidence and pride in the uniform, thereby improving worker morale and performance. The project demonstrates how an interdisciplinary design process can serve as a catalyst; incorporating symbiotic elements and approaches to create a holistic, stratified proposal. Cognitive mapping was vital, as was the primary and secondary research conducted throughout the design process.

Keywords: *migrant workers, thermal comfort, superheroes, critical design, indigenous clothing systems, adaptive materials.*

Introduction

They are ubiquitous, yet unseen. Qatar's migrant workers¹ earn minimal rewards, as they risk their health, and sometimes their lives to build one of the richest countries in the world. They face many hardships, however heat, aggravated by their poor working and living conditions, is omnipresent causing hundreds to be hospitalized during the months of March to August. This project aims to improve the thermal comfort of blue-collar workers in Qatar thereby improving their health, safety, morale and performance.

Clothes act as a second skin. They envelop us wherever we go, directly influencing the rate and efficiency with which heat is exchanged between our body and its surroundings. Moving away from a sophisticated “space suit” or Personal Protection Equipment (PPE) model, this project combines indigenous heat management materials, clothing and architectural systems with new technologies to create a low-tech concept suit that improves thermal comfort. The two-layered suit aims to optimize heat exchange mechanisms by protecting the wearer from heat radiation and enhancing convection, conduction and evaporation.

Using fiction as a medium of social commentary and critical design, the concept suit borrows from the superhero aesthetic. The muscular suit symbolizes the superhuman feat these workers perform and capitalizes on the empowering effect of uniforms. Improved functionality coupled with a heroic form should trigger confidence and pride in the uniform, thereby improving worker morale and performance.

Even while focus was on workwear, a broad research-net was cast to understand the workers’ physical, physiological, psychological and sociological environments. The paper starts with “Context,” quickly reviewing all of these environments. “Design Process” follows to briefly present: Problem Definition and Scope; Research; Synthesis; Concept Generation; and Mockups and Prototypes.

Problem definition, research and concept generation employed a number of methods. Some are traditionally used by designers to visualize, externalize and process information such as: mind maps, word maps, mood boards, bodystorming and sketching, while other methods were adopted from the field of science, such as the henna experiment, and from the field of social sciences, such as the material explorations, photo documentation and artifact analysis, field observations, the workers questionnaire and the ethnographic study. A brief summary of primary qualitative and quantitative research, as well as the most relevant secondary research is also presented.

An interdisciplinary approach provided a holistic and informed view of the problem. As a result, the concept suit unites science, technology, architecture, indigenous sartorial habits, fiction and fashion in a stratified proposal.

Context

Heat-related morbidity and mortality is a worldwide problem, especially with the rise of global temperatures (“Climate change” 2014). In Qatar, an estimated 771,656² male blue-collar workers are at risk.

This risk is primarily caused by Qatar’s 30° to 50° C summer temperatures and high humidity levels (20 to 95%) which hinder the body’s ability to dissipate heat. Glass-clad high-rises, concrete structures, cars and machinery create an urban heat island, which further intensifies the problem.

Sleep deprivation³ caused by overcrowded, unhygienic, uncomfortable, and extremely hot accommodations (Human Rights Watch (Organization) 2012:65); and dehydration caused by the scarcity of cold, easily accessible potable water (Human Rights Watch (Organization) 2012:65; Olayiwola 2010:8) aggravate heat-related illness/injury among migrant workers. Overheating caused by the absence of cooled/air-conditioned transportation, rest areas and accommodations; and delayed medical care also increase the risk (Lesley Walker 2014).

Most importantly, field observations (figure 1) have indicated that the majority of workers in Doha wear basic cotton, or cotton/polyester, coveralls and a T-shirt head and face cover that only reveals the eyes (unless they are wearing goggles or sunglasses). Apart from the innovative T-shirt head cover devised to protect the workers from heat radiation, and the perforated mesh side panels found on some high-end coveralls, the generic coverall provides minimal relief from Qatar's harsh climate and is not designed to promote thermal comfort.



Figure 1: Example of the common coverall (with mesh side panels) and T-shirt headdress worn in Qatar, Arabesque Glass-fiber Reinforced Concrete (GRC) factory, Industrial Area, November 19, 2011, 1:00pm. Average temperature outdoors 29°C, average humidity 70%, heat index 33 (extreme caution). The fan facilitates convective and evaporative cooling, especially since the T-shirt covering the nose and mouth is wet (Khairat 2011).

Although these workers constitute approximately 50% of Qatar's entire labor force, they have no economic or social clout. Living on the fringe of society, hidden and underserved, they are unable to influence decision makers and employers. They are also prohibited, under Qatari labor law, from forming unions, bargaining collectively and/or striking (Human Rights Watch (Organization) 2012:42–43). While there have been some modest efforts⁴ to improve their situation, more is needed if Qatar hopes to achieve sustainable and ethical social and economic advancement.

Design Process

Problem definition & scope

From the very start, brainstorm graphic organizers, word maps/associations and mind maps were vital in clustering information and establishing connections. By visualizing and externalizing ideas and thoughts, it not only became possible to identify, understand and organize existing knowledge, but also to generate new and unorthodox associations. Mapping was fundamental in keeping a macro view of the problem and in reconciling multiple disciplinary aspects into a harmonized whole.

Secondary Research

The project required extensive secondary research. All aspects of heat and heat management were explored, however, only the elements most relevant to the final project are presented in this paper (figure 2).



Figure 2: A mood board that gathers the different elements of research pertinent to the final concept suit. Top images from left to right: Erdogyne PCM pack (Ergodyne 2012); henna-dyed wool (Blazek and Crouzet [sa]); Beijing National Aquatic Center or “Water Cube” (Garvey 2008); Taichung Convention Center in Taiwan (MAD Architect [sa]); Traditional Gulf building with Badgheers (Khairat 2012). Middle images from left to right: (top) Nike Ice Vest (Nike 2008); (bottom) Naica ice-pack suit (“Tullio Bernabei” [sa]); location of sweat glands on the body; North African galabiya pattern with gussets; Ernesto Thyaht’s 1919 Tuta (Firenze 1919). Bottom images from left to right: sketch showing kohl applied to the eye. Oryx gazelle with blackened eyes that act as sunglasses, protecting the eyes from the sun’s glare (“gemsbok” [sa]); pleated Pharaonic cloak (Hall 1986:36); a sketch inspired by the Tuareg head cover; “the muscular body” as portrayed by Naoki Takizawa for Issey Miyake’s Spring/Summer 2001 (Bolton and Chabon 2008:72–73).

Learning about heat exchange mechanisms (convection, conduction, radiation and evaporation) and the location of the body’s sweat glands, pulse points and areas of high thermosensitivity (the head, neck⁵, and face regions) proved invaluable to the design of the concept suit. The concept suit was developed based on recurring features that were identified in: clothing worn by indigenous desert dwellers in Africa and Asia; clothing recommended by British colonialists (Johnson and Foster 2007:44) and Orientalists in the 19th and early 20th Century and by present-day survival experts, such as David Alloway (2000:98–101) and Greg Davenport (2004:27–31). Also considered were: clothing currently worn by Qataris and by Qatar’s migrant workers; clothing worn by NASA astronauts for desert survival training (Mason 2011); clothing worn by scientists and explorers of the Naica caves (“Naica” [sa]); and athletes’ performance gear. These recurring features include: the use of loose layers of light fabric to protect the wearer from sand and heat, and to facilitate convection; covering the entire body, especially the head⁶ and very often the face, to minimize the effects of heat radiation; and using a wicking inner layer, close to the skin, to provide comfort and promote evaporative cooling.

There was a noticeable similarity between the *galabiya* (Egyptian full-length, flared, cotton tunic worn by men) and the *Tuta*, the economic work/leisure wear designed by Ernesto Thyaht (figure 3). The similarity lies in the use of gussets, a feature that is also used in the concept suit to provide comfortable width and aeration to the crotch and under-arm region, where sweat is abundant.



Figure 3: (Left) Pattern of the Egyptian *galabiya*. (Right) The *Tuta* designed in 1919 by the Italian Futurist Ernesto Thyacht (Firenze 1919).

Research into traditional and technical cooling materials was also extensive. Phase Change Materials (PCM) were among the technical materials researched. PCMs are also known as adaptive or intelligent materials because they adapt to ambient temperatures. At a solid state, PCMs absorb heat until they reach their melting point, and need to be recharged/frozen. The opposite process occurs in cold weather (Mattila 2006:21). Inorganic PCMs are used in the Ergodyne PCM Cooling Vest (Ergodyne 2009), which was part of the artifact analysis. Ice, also considered a PCM, is used in the Nike Ice Vest to precool athletes, so that they can finish competitions at a lower core temperature (Nike 2008), and also in the ice suit developed by the Naica research team to withstand the extreme 50°C heat and 100% humidity of the Mexican caves (“Naica” [sa]). As supported by research⁷, the concept suit’s PCM packs were strategically placed in pockets located on areas of high thermal sensitivity such as the neck, chest and abdomen to accelerate cooling.

Traditional materials researched included henna and kohl, among others. Henna is reported to have cooling properties, when applied to the skin (Fabius 1998:24; Makhija 2008), and kohl has been used since Pharaonic times “to reduce the sun’s glare” (Kreston 2012). Research went on a tangent to identify some common characteristics of desert animals⁸ (Baker 2014; “Slater Museum of Natural History” 2014). Blackened eyes—a feature similar to applying kohl—was carried through to the final project.

Functional and aesthetic inspirations were also borrowed from architectural structures. Passive cooling mechanisms, such as *Badgheers*⁹ used in Gulf architecture, along with the underground *qanat* (stream/canal) were translated into mesh-lined pleats that promoted air circulation and convection, and PCM packs that cooled incoming air. Figure 4 shows the clothing system inspired by this cooling system.

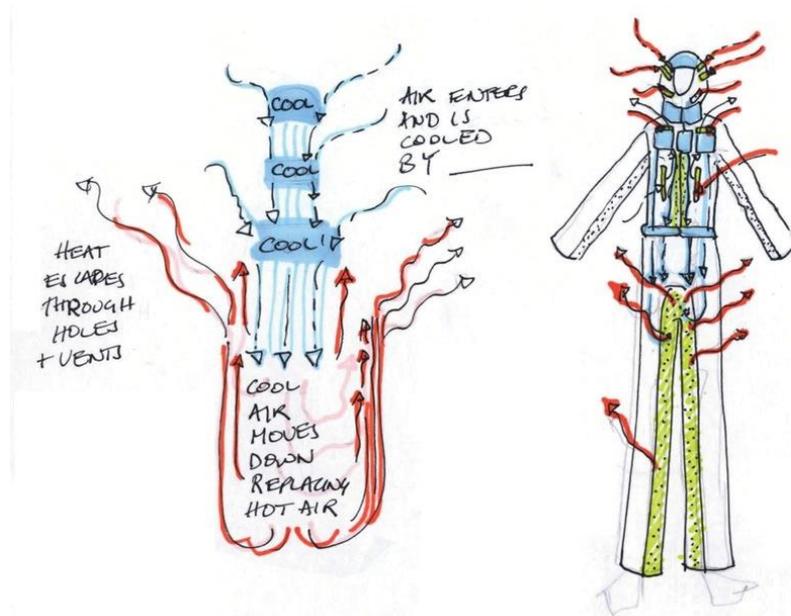


Figure 4: Thermoregulation clothing structure adapted from traditional Gulf architecture.

The bubble-like exoskeleton of the “Water Cube” or Beijing National Aquatic Center inspired the cooling turban (figure 5) and the energy-saving Taichung Convention Center in Taiwan inspired the idea of ventilation pleats.

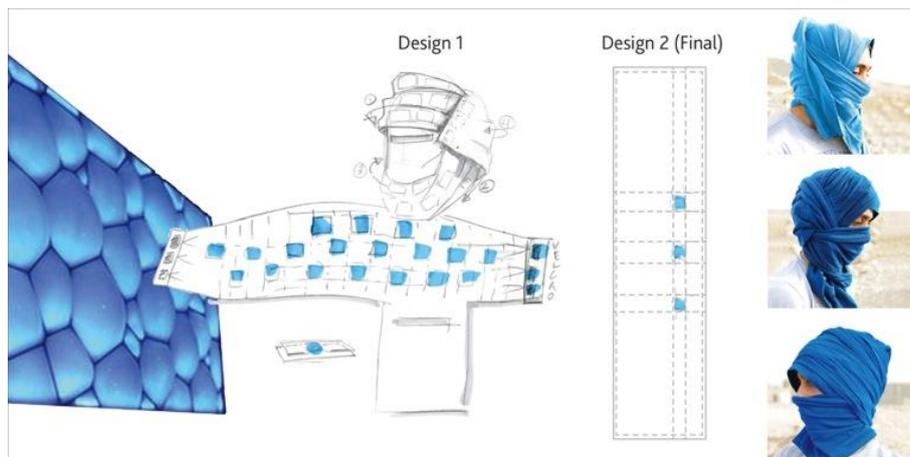


Figure 5: Designs for the “Water Cube”-inspired cooling turban and the different ways to it could be wrapped.

The “three key words” word map revealed the hero concept, which was developed by studying the costumes worn by TV adaptations of Green Arrow and Superman, as well as, the 2008 book, *Superheroes: Fashion and Fantasy*. Among the Inspirations were forms by Sruli Recht (Field Dressing 2012) and Issey Miyake, specifically “the muscular body” as portrayed by Naoki Takizawa for Issey Miyake’s Spring/Summer 2001 collection.

Primary Research

The workers questionnaire, conducted in March 2012, which surveyed 791 workers from nine different labor-sending countries and who worked at seven different companies in Qatar, provided valuable quantitative and qualitative data. The questionnaire concluded that 88% of the workers received

between one to four sets of work clothes each year and that 93% received coveralls from their employers. Sixty five percent of the workers said that they washed their work clothes every day, confirming the need for durable work wear. Although 65% of the workers said that they showered before they came to work, thus cooling their body, 90% of the workers stated that they travelled to work every day in an un-air-conditioned bus. The stifling bus ride definitely counteracted the effects of the cooling morning shower.

Secondary research highlighted the cooling effects of henna when applied to the skin, which led to the question of whether henna-dyed fabric also facilitated cooling. The henna experiment (figure 6) showed that henna-dyed cotton cloth was 10°C cooler than its un-dyed counterpart. Because of the impermanence of natural dyes, henna was not used to dye the concept suit; however, henna tattoos were applied to the body's pulse points to accelerate cooling.

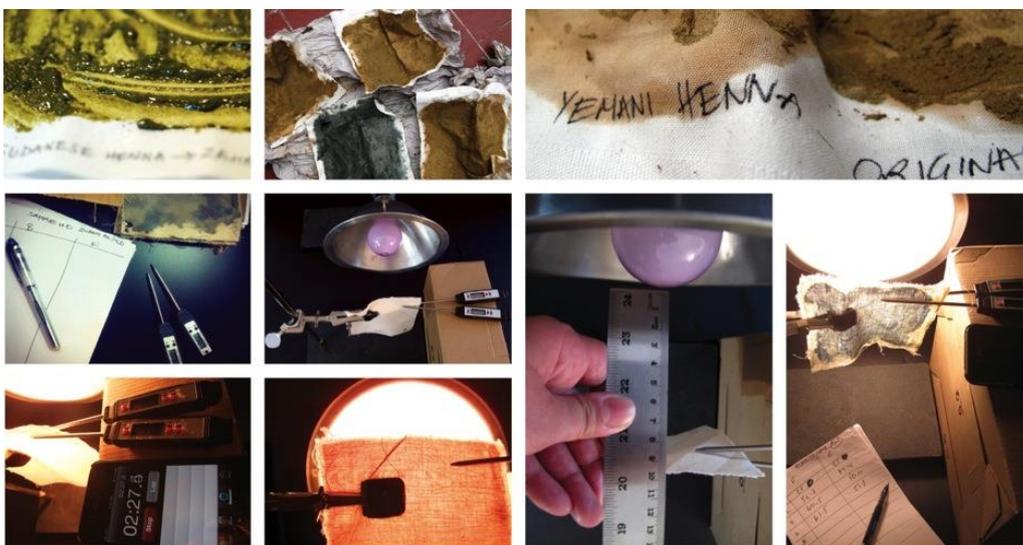


Figure 6: The henna experiment.

An artifact analysis of work wear sold in the Qatari market identified useful features that were later used in the concept suit. These included perforated mesh panels, pleats to improve movement and expanding seams (figure 7).



Figure 7: Artifact analysis of local store bought coveralls.



Figure 8: Exploring the T-shirt.

The workers questionnaire and field observations showed how the workers used their current work wear, especially the T-shirt. The T-shirt was of particular interest and after a bodystorming exercise to experience its comfort and usability (figure 8); it was optimized to become the inner layer of the concept suit (figure 9).



Figure 9: Mockup of the cooling T-shirt.

Synthesis

Figure 10 represents the main research elements that were used in the final project. Some are behavioral, such as applying henna and kohl, while others are structural, material and process-related.

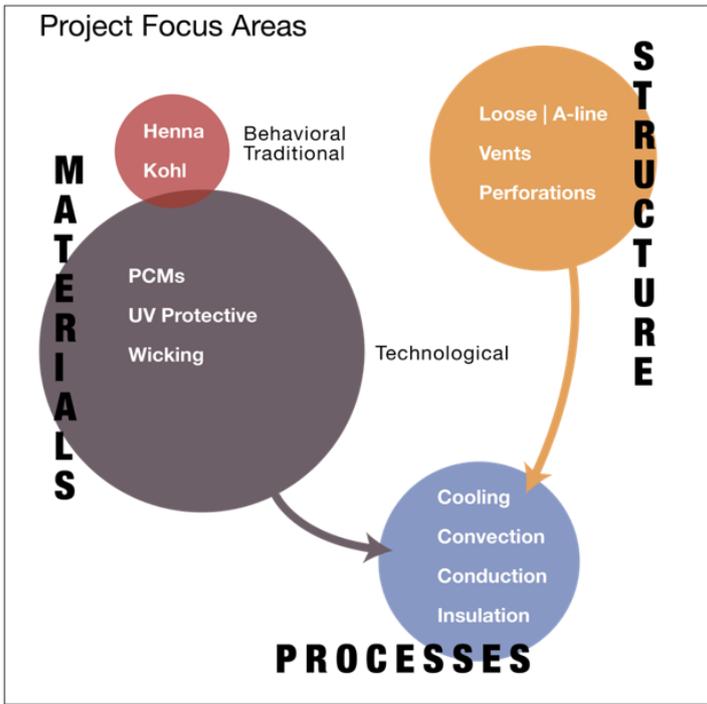


Figure 10: Project focus areas.

Concept Generation

Word maps were instrumental in triggering unexpected associations that inspired the superhero concept. Figure 11 shows iterations of the superhero concept suit that incorporated the different elements of research.

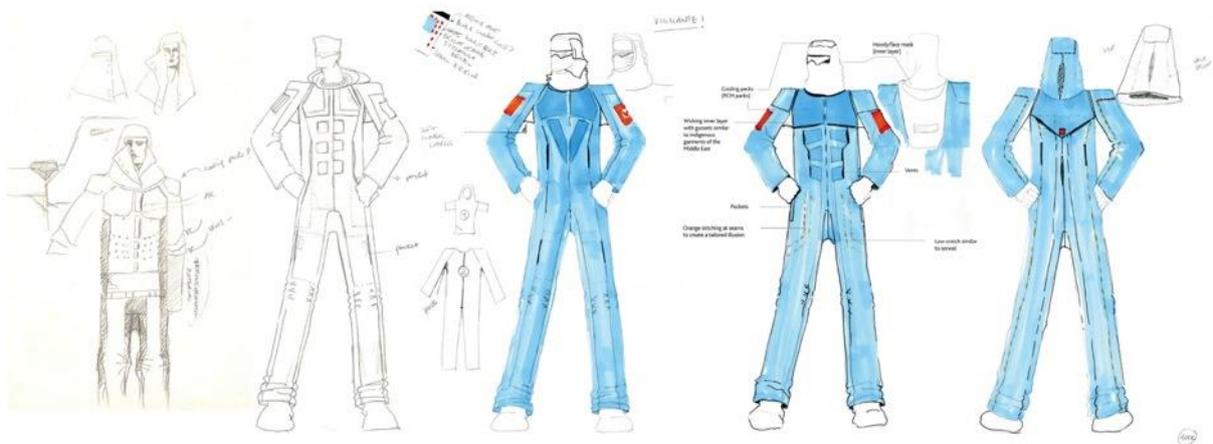


Figure 41: Origins and development of the superhero.

While many ideas were generated towards solving the functional, pragmatic problems of heat and hydration, as seen in figure 12, other sketches flirted with the perceived form. Figure 12 shows a suit that incorporates the different characteristics desert animals use to combat heat. The resulting aesthetic looks more like an anti-hero than a hero. Figure 13 questions social status by creating a head cover that resembles the Qatari male head cover. The emotive qualities of the face cover were explored in figure 14.

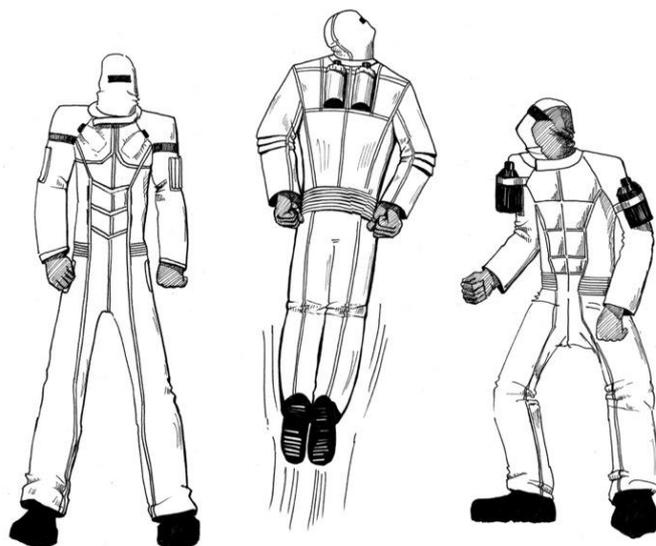


Figure 12: Exploring the placement of a water pouch to promote healthy hydration habits.



Figure 53: “Anti-hero” inspired by the Oryx.

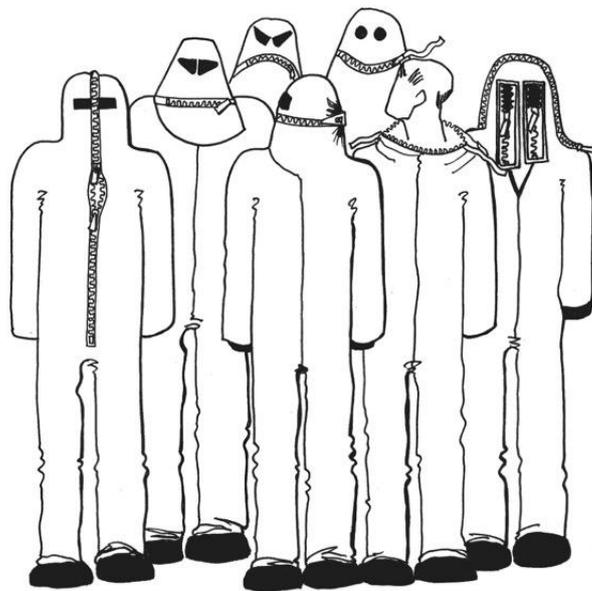


Figure 14: “Zipper mob.” The emotive qualities of the face cover.

Mockups and Prototypes

After producing a number of exploratory mockups, the final prototype was made to include two layers: an inner layer and an outer layer.



Figure 15: T-shirt inner layer.

The wicking, UV protective, form-fitting T-shirt-like inner layer (figure 15) features strategically placed pockets to hold PCM packs (or ice packs) located on areas of high thermal sensitivity, such as the chest, abdomen and neck. The head and face cover is attached to the t-shirt and can be worn in three different ways (figure 17).



Figure 16: Features of the coverall outer layer.

The outer layer of the concept suit (figure 16) is made of a sturdy blue twill fabric. To allow for convective cooling, the coverall incorporates the research elements previously described. It is loose fitting and has a low-hanging crotch. It has perforated gussets located at the crotch and under-arm

area. A perforated strip also runs along the back. Pleats at the back of the waist improve mobility. Pleats lined with perforated mesh, located around two of the body's pulse points, the elbows and knees, mimic the Taichung Convention Center and further facilitate cooling and mobility. The coverall uses Velcro instead of zips, for ease and to avoid zipper malfunction caused by sand.

A broad-shouldered top-heavy silhouette accentuated by orange topstitching and utility pockets on the abdomen, to mimic a six-pack, further accentuate the masculine superhero concept. Henna on the nape promotes cooling and kohl counteracts the effects of the sun's glare (figure 17).



Figure 17: The concept suit.

Conclusion

To achieve sustainable growth, Qatar should make a more concerted effort to address the many problems facing migrant workers. This project touches on one of these problems, heat-related illness. The final low-tech hero-inspired concept suit uses indigenous inspirations to facilitate thermal comfort. An interdisciplinary design process was used to fully understand the workers' social, physical,

physiological and psychological environments. In this process, multiple lenses were needed: a broad macro lens to sweep the full breadth of the problem(s), and a piercing micro lens to rigorously delve into the problem(s). The various mapping tools used in the design process not only helped externalize and visualize information, but also navigate through and across these multiple planes, making sure the main issue always remained in full focus. Word maps, such as “the three keywords” map also helped create relevant and unexpected associations that were key to generating the final superhero concept. Experimentation, simulations (such as the T-shirt bodystorming exercise) and prototyping all went hand in hand.

Although this project focuses on Qatar’s migrant workers, with minor modifications, the outcomes may easily be appropriated to other regions and populations.

This project presents a concept suit. Yes, its features are founded on credible secondary research, but it is ultimately a statement suit, designed to highlight an issue. To fully realize this suit so that it benefits its target migrant worker population, scientific testing must be conducted to ensure that it provides measurable thermal relief in Qatar’s climate.

A holistic interdisciplinary approach made it possible to address multiple issues facing this neglected population by incorporating function, fiction and fashion.

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Endnotes

¹ The term *migrant worker*, *worker*, *laborer* and *migrant laborer* are used interchangeably to refer to the blue-collar population of Qatar.

² By cross tabulating occupation and economic activity data found in table 12 of the most recent “Labor Force Sample Survey,” conducted in 2013 by the Ministry of Development, Planning and Statistics (MDPS), one can estimate that 771,656 “Economically active” male blue-collar workers aged 15 years and above are potentially at risk of heat-related illness and/or injury. These workers fall under the following occupational categories: *Skilled Agricultural And Fishery Workers; Craft and Related Trades Workers; Plant and Machine Operators and Assemblers; and Elementary Occupations*. These workers practice the following economic activities: *Agriculture, forestry and fishing; Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply-sewerage, waste management and remediation activities; Construction; Wholesale and retail trade-repair of motor vehicles and motorcycles; and Transportation and storage* (MDPS, 2014, sec. 12).

³ Non-rapid eye movement (NREM) sleep increases after a day of elevated brain temperature resulting from physical exertion. This suggests “that the brain somehow stores information about how long brain temperature is elevated during the day and then compensates for this ‘awake heat load’ by sleep-related cooling” (Gisolfi and Mora 2000:83–88).

⁴ Some efforts are being made to reduce heat-related illness and injury. These include; a midday outdoor work ban from June 15 until August 31; awareness talks and a heat stress guideline booklet issued by the Supreme Council of Health (SCH 2009) in Arabic, English, Hindi, Urdu, Malayalam and Bengali (Dizon 2011:17); and heat stress management programs that are generally launched by large companies, such as RasGas (RasGas, 2013) and Qatar Gas (Daniel 2013).

⁵ Research by Tyler and Sunderland (2011) entitled, “Cooling the Neck Region During Exercise in the Heat,” showed that cooling the neck region allowed athletes to tolerate higher core temperatures and dampened the body’s perception of thermal stress.

⁶ Mount (1979:151) states that 40% of total heat loss, especially in windy conditions, is from the face region.

⁷ A Norwegian study published in the *International Journal of Occupational Safety and Ergonomics*, entitled, “Optimizing the Performance of Phase-Change Materials in Personal Protective Clothing Systems,” concluded that the amount and the strategic placement of PCM packs in Personal Protective Clothing systems positively influenced thermal comfort, reduced sweat and improved moisture transport to the outer layers of the clothing system (Reinertsen et al., 2008).

⁸ Some common features of desert animals include: long appendages, long horns or ears to dissipate heat, light-colored under belly, glossy pale coat, long lashes to trap sand and blackened eyes to lessen the sun’s glare (Baker 2014; “Slater Museum of Natural History” 2014).

⁹ *Badgheers* are horizontal or vertical vents and perforated panel

AN INTERPRETIVE METHOD FOR THE ANALYSIS OF DESIGNED ARTEFACTS

Raymund Königk

University of Pretoria

Abstract

This paper addresses the theme 'respect and responsibility' and in the context of collaboration and participatory design considers the generation of meaning in cultural artefacts. This is aimed at greater interactivity and responsiveness between artefacts and their users and is presented from a position of reflexivity which considers the reciprocal relationship between culture and the objects it produces. There is an underlying system that controls all cultural forms; this may be studied through analogy with language. I consider the cross-disciplinary application of semiotic theory from a poststructuralist position where emphasis shifts from form to content. This erodes the primacy of the physical and considers advances in representation. Artefacts are considered as open texts supporting multiple interpretations. In this milieu the interpreter does not have to trace the original intention of the author, neither does the text have to provide a unique and final meaning. The research process itself informs and constructs the phenomenon; this has links with constructivist grounded theory. An interpretive method is proposed which allows for the critical analysis of designed artefacts that go beyond mere semantic description while avoiding the banality of describing intertextual references. Critical interpretation is a meta-linguistic activity which describes and explains the formal reasons a text produces a response. Every text (and by extension every artefact) can be interpreted semiotically and critically. In future this analysis can contribute to the generative processes of new artefacts through the interpretation of existing artefacts. The description of designed artefacts becomes a social reality whereby design has impact through the documentation and dissemination of its artefacts. This method will allow for the critical assessment of these 'texts'.

Keywords: *artefact; cultural gestures; interdisciplinarity; interpretation.*

Introduction

This paper addresses the theme 'respect and responsibility' and in the context of collaboration and participatory design considers the generation of meaning in cultural artefacts. This is aimed at greater interactivity and responsiveness between artefacts and their users and is presented from a position of reflexivity which considers the reciprocal relationship between culture and the objects it produces.

The origins of the search for an interpretive method of analysis lie in my own creation of mood boards as a synthetic method to collect visual meaning that serves as the initial visual concept. By implication, the final product reflects the meanings collected in the mood board. If artefacts and language are related (in as far as being carriers of meaning) then form and meaning is discerned in observed realities. In linguistics The underlying system that controls all cultural forms may be studied by analogy with language (Leach 1997:156). Artefacts contain a multiplicity of meanings and gestures. Further, they exist ecosystemically in the paradigm (Fisher 1992). To support the generation of new artefacts

tacit methods may be identified through the interpretation of existing artefacts. Methods to create meaning may be identified in individual utterances (artefacts) with the aim to generalise and universalise.

Problem and research method

The problem is to determine a rigorous interpretive method to analyse designed artefacts, aimed at isolating methods of creating meaning. The purpose is to improve collaborative design production in the design of new artefacts through greater levels of creativity, leading to complex and subtle artefacts that are contextually appropriate.

The research is constructivist grounded theory (described by Charmaz 2006). When we are engaged with data we *construct* our understanding based on our subjective view of the world (Charmaz 2006:47). The purpose is to offer an interpretive portrayal of the world (Charmaz 2006:10). The constructivist grounded theorist is imaginative and understands that as the world is a construction, so is their understanding of it. Constructivists study *how* meaning is constructed in specific situations (Charmaz 2006:130). In a similar vein, this paper will propose a method to investigate *how* meaning is constructed in designed artefacts. Knowledge is generated in the form of theoretical interpretation of artefacts (research *about* design). As grounded theory aims at the creation of abstract theory by analysing specific cases, so will the proposed method generalise universal methods by analysing specific artefacts. Constructivist grounded theory is underpinned by a relativist position which states that the researcher constructs theory as an outcome of their interpretation of the data (Mills, Bonner & Francis 2006:7). The research process itself informs and constructs the phenomenon. To initiate the investigation, literature on semiotics and interpretive methods were collected. From a poststructuralist perspective coded segments of data were categorised and reassembled to develop an emergent method (this was facilitated with the use of computer assisted qualitative data analysis software (CAQDAS)).

Background

In support of the argument all artefacts are considered as 'texts'. If the author's intentions are considered as separate from what a text actually says (Eco 1990:50-51) it allows for the evaluation of the text in isolation without considering the author's intentions. Texts are open, supporting multiple interpretations (Eco 1990:41). The interpretation of a text is a creative act, dependent on the attitude of the reader. The interpretation does not provide a unique and final meaning; i.e. the reader is complicit in the production of meaning. The interpretation of texts therefore contributes to creative production. Thus production will fail if the reader does not participate in the process.

The interpretation allows for two levels: semantic interpretation accepts the given meaning, while critical interpretation is a meta-linguistic activity describing and explaining the formal reasons for a response (Eco 1990:77). Meaning production is an iterative process which relies on the actions of all the role players. Meaning is formed at a text's inception and interpretation. An artefact's meaning is dependent on its acceptability to a reader with sufficient goodwill to it as plausible.

Semiotics

Eco (1979:24) describes the reciprocal relationship between semiotics and culture: society transforms every functional object into a sign of its function. Cultural phenomena are reducible to semiotics (Gottdiener 1985:991). To consider the creation, transmission, reception and interpretation of meaning

as a process provides insight. The process must take place in context, expanding the role players to three: the author, the reader and society. Semiotics place emphasis on the interaction between objective systems of signification and the intersubjective basis of meaning, “the object of analysis in semiotics is the socially sustained system of signification, including its material objects and their interdependencies, that produces and sustains meaning through socio-structural interaction,” (Gottdiener 1985:985). Thus, the process of signification is objective and universal, while the process of interpretation is subjective and specific. During the production and dissemination of meaning the interpretation should not be under evaluated. Semiotics serve as analogy for the generation, dissemination and decoding of *meaning*.

A sign is considered as anything that stands for something else (Eco 1979[1976]:16). A sign is produced when the signifier and signified are brought together in a single entity (Crow 2003:18). In Peirce’s model a sign is the interrelationship between three components: 1.) The *representamen* (the physical aspects); 2.) the *object* (the impression evoked); and 3.) the *interpretent* (the subjective meaning, constructed when connecting the representamen and object) (Eco 1979:15). Barthes (1983:5-6) identifies three semiotic structures: 1.) The *technological* (actual artefacts); 2.) the *iconic* (pictorial representations of the artefacts); and 3.) The *verbal* (textual descriptions of either the technological or iconic structure). Both Peirce’s and Barthes’ triadic relationships offer the possibility of subtlety in analysis which the dialectic sign does not. A dialectic analysis may lead to a superficial and banal listing of connotations, without further critical analysis.

Gottdiener (1985:988-9) identifies two semiotic traditions: the first, places emphasis on the symbolic life of objects in society (culture is a discourse about objects); the second acknowledges that culture cannot be reduced to signs, as artefacts possess a material existence and communicate meanings when used. The semiotic interpretation of artefacts therefore implies greater complexity than identifying meaning. As poststructuralism is an extension of the structuralist project, it changes the focus of semiotic theory: the focus is no longer the sign, but the process of creating meaning. To investigate the process three semiotic constructs are considered:

Artefacts

Artefacts are social texts of materiality (Mitchell 2011:37). Artefacts have a semiotic nature since they have sign functions, and cultural functions are sign devices (Eco 1979:28). When an artefact is used it acquires symbolic value connoting external meaning: the object becomes a symbol of its function or type. Through its content the artefact is a cultural agent encoded within its paradigm: “[a]s such the artefact is active within the cultural system,” (Fisher 1992:17). The content of an artefact can be interpreted and decoded at a later time, permitting the possibility of reintroducing anachronistic content in a novel fashion (Fisher 1992:18). Every artefact is made up by three constituents: 1.) the material form; 2.) the idea or subject; and 3.) the content. It is the combined appreciation of all three that is realised in the aesthetic experience (Panofsky 1955:16).

Denotation and Connotation

The empirical contents of artefacts are self-evident, but to question the meaning of artefacts requires further abstraction (Burnett 2004:14). Both the denotation and connotation are important in visual research (Mitchell 2011:41). The denotation includes all the attributes that may function as triggers for the impressions of an artefact, including all the concrete physical aspects of the design (Opperud 2004:138-139). The denotation is the stable meaning attributed to a code (Eco 1979:56). The

denotation is the representamen and its conventional meaning. The connotation is unstable (Eco 1979:56) and includes the spontaneous impression (evoked in the reader) and the subjective meaning (Oppenrud 2004:138). The connotation is a coded image generated when the reader plays a creative part by applying their own knowledge and understanding (Crow 2003:75). The connotation refers to all the diverse meanings associated with a text (Burgess 1990:146). In Peirce's triadic structure the connotation involves the object and interpretent. In summary, the denotation is considered to be the stable and observable empirical evidence, while the connotation is the unstable and subjective interpretation.

Semiosis

Semiosis is the process through which meaning is transferred. Semiosis is not a one-way process of fixed meaning; it is a creative process between the artefact and the reader (Crow 2002:36). In the Peircian definition semiosis is the interaction between the representamen, its object, and its interpretent (Eco, 1979:15). Since Peirce's definition is reliant on three abstract semiotic entities and not human subjects they do not demand that the qualities are intentionally emitted and contrived (Eco 1979:15).

The iconic semiotic structure

Humankind is the "only animal to leave records behind him, for he is the only animal whose products 'recall to mind' an idea distinct from their material existence" (Panofsky 1955:5). Pictorial representations never had the importance in daily life they do today (Isar & Anheier 2010:7). This establishes the importance of images as sources of meaning. Any image will connote diverse meanings (Burgess 1990:146).

The earlier study of semiotics had a linguistic bias resulting in the under-analysis of other semiotic resources. Since this dialectic between pictorial and textual structures is evident, it is important to consider the relationship between them. In his analysis of the system of fashion, Barthes (1983:6) asserts that in the fashion system the circulation of meaning is dependent on the transformation from the technological to the iconic and verbal structures. Meaning is thus transferred between different semiotic modes: 1.) from the real to the image; 2.) from the real to language; and 3.) from the image to language. The 'transformation' described here is only considering the representation of an existing artefact. During the design and manufacture of artefacts images are created of future artefacts, which are then manufactured according to the designer's recorded intentions. A fourth shift occurs: from the image to the real. Once this happens the process is no longer discontinuous, especially if new artefacts become representamina of other objects and interpretents. The interpretive method proposed aims to understand the creation of meaning in artefacts which is applicable in the cyclical shift between image and artefact.

Images are the predominant conveyors of the canon and disseminate its embedded knowledge. Images substitute the artefacts and reach a greater audience. There are in fact two parallel canons: 1.) the canon of artefacts; and 2.) the canon of images (Attwill 2007:59). If the canon of images is considered, differentiation must be made between images that record an existing artefact (e.g. photographs of built artefacts) and future intentions (e.g. design proposals). As with the interpretation of meaning, the viewing of images is not a passive act. Understanding an image happens at the intersection between creativity, viewing and critical reflection (Burnett 2004:14). The method proposed considers the canon of images as the source for interpretation. The pictorial representation chosen as

empirical source is the photograph. This is due to its perceived accuracy and ubiquity. Photographs serve a documentary function (Serraino 2002:129) and furnish evidence (Sontag 2010:5). As three-dimensional artefacts are conceived and represented by the drawing, so is it relevant to study objects through photographs. Photographs as evidence must be approached with care: the image exists in a representational triangle of object, image and viewer. The creative intervention of viewers can be seen as a disruption of the intentions of the image creator (Burnett 2004:15). This is significant if images are considered as 'texts' and the interpretive role of the reader is considered. It is important to remember that the photograph is not the artefact; photographs are artefacts representing other artefacts. Photographs provide a new visual code, a new grammar and a new ethics of seeing (Sontag 2010:3). Since the photograph is also an artefact, it is not only a representation about the world, but part of the world (Sontag 2010:4).

Interpretation

Photos may be considered as 'objects' with their own material culture. The analytical techniques to interpret them are based on other practices and data sets. Their analysis may include content analysis, engaging in coding and developing thematic categories (Mitchell 2011:11). Content analysis is the analysis of (written, spoken or visual) data with the aim to systematically describe form and content. Since qualitative data may often be ambiguous, a systematic approach is advised for rich text and deep accounts (Martin & Hanington 2012:100). The analysis of material objects through theorising abstract concepts are expanding the possibilities of evidence (Mitchell 2011:36) and the emergence of visual research as a viable approach is placing the traditional positivist expectations of the academy under pressure (Mitchell 2011:12). The task consists of inventory and classification (Barthes 1983:60), but in practical terms it is necessary to go deeper in order to establish sets of interacting signs: first determine the semiotic units of the text, and secondly indicate their interactions within the artefact; the proposed method will indicate these diagrammatically.

The methodological problems encountered to order the cultural cosmos is analogous to the steps used to organize the natural world. The first step is the observation of phenomena (collecting empirical material); secondly these must be interpreted; finally the results must be coordinated in a coherent system or theory (Panofsky 1955:7). Implicit meaning is categorised into three strata: 1.) primary or natural subject matter (concerning form and motif); 2.) secondary or conventional subject matter (connoted meaning); and 3.) intrinsic meaning (concerning underlying principles) (Panofsky 1955:28-30).

In summary, the interpretive method will follow this sequence: 1.) observation (through the collection of photographs); 2.) (semiotic) interpretation; and 3.) coordination (to create a coherent theory). Through systematic content analysis, signs are identified and their interrelationships illustrated.

In vivo codes

Grounded theorists are encouraged to use the words of the participants (from interviews or transcripts) when coding qualitative data (Wiener 2007:301). These codes 'living within' the data are referred to as *in vivo* codes. *In vivo* codes have the benefit that they provide useful analytic points of departure and they preserve the meanings and views expressed in the data (Charmaz 2006:55). The use of *in vivo* codes helps to 'ground' the theory by providing a vocabulary which emerges from the data and support consistency in coding practice.

When photographs (and other visual texts) are analysed they do not generate *in vivo* codes. However, the benefits are difficult to ignore. To support the interpretive method a list of *in vivo* codes was compiled; these were specifically constructed to support the analysis of interior design artefacts. CAQDAS was used to derive *in vivo* codes from interior design and semiotic literature. It falls beyond the scope of this paper to discuss this process. The *in vivo* codes are recorded in Addendum A. Although these *in vivo* codes may be used in related design disciplines, it is recommended that discipline specific *in vivo* codes are compiled.

Findings

In summary, these are the findings of the paper:

1. The interpretation of an artefact can explicate tacit generative processes.
2. The dualistic sign can be avoided by searching for more subtle and complex semiotic relationships.
3. Artefacts are considered as material texts, and are analysed through three processes: denotation, connotation and semiosis.
4. Meaning is transferred between the artefact and its visual and verbal representations. These structures provide content for later artefacts; the process of generating meaning is iterative.
5. The photograph is selected as primary empirical data source. Photographs can be analysed with grounded theory and systematic content analysis.
6. The highest form of interpretation involves studying methods. Through sequenced analysis (observation, interpretation, coordination) signs can be identified and their interrelationships illustrated.

A method is proposed which allows for the critical interpretation of designed artefacts that exceeds semantic description. Critical interpretation is a meta-linguistic activity which describes and explains the formal reasons why a text produces a response. Every artefact can be interpreted both semantically and critically.

An interpretive method

The interpretive method proposed follows a systematic technique. It may be applied in the analysis of a single artefact, or larger groupings of artefacts may be analysed together:

1. Photographs are collected and captured.
2. A memo is written at the time of selection (capturing first impressions).
3. A visual association is captured (demonstrating a representamen and interpretant of the object). The purpose is to stimulate the researcher's emphatic response.
4. Semiotic methods are denoted on the photograph (using *in vivo* codes – see Addendum A) and described; the comments are brief and specific.
5. 'Unstable' and subjective connotations are made explicit.
6. Codes and their syntagmatic relationships are diagrammed.
7. The process is interpreted and described; the comments are brief and abstract. The purpose is to understand meaning creation in the artefact.

The method allows the interpreter to analyse existing artefacts and apply the findings in the generation of new artefacts (refer to Figure 1).

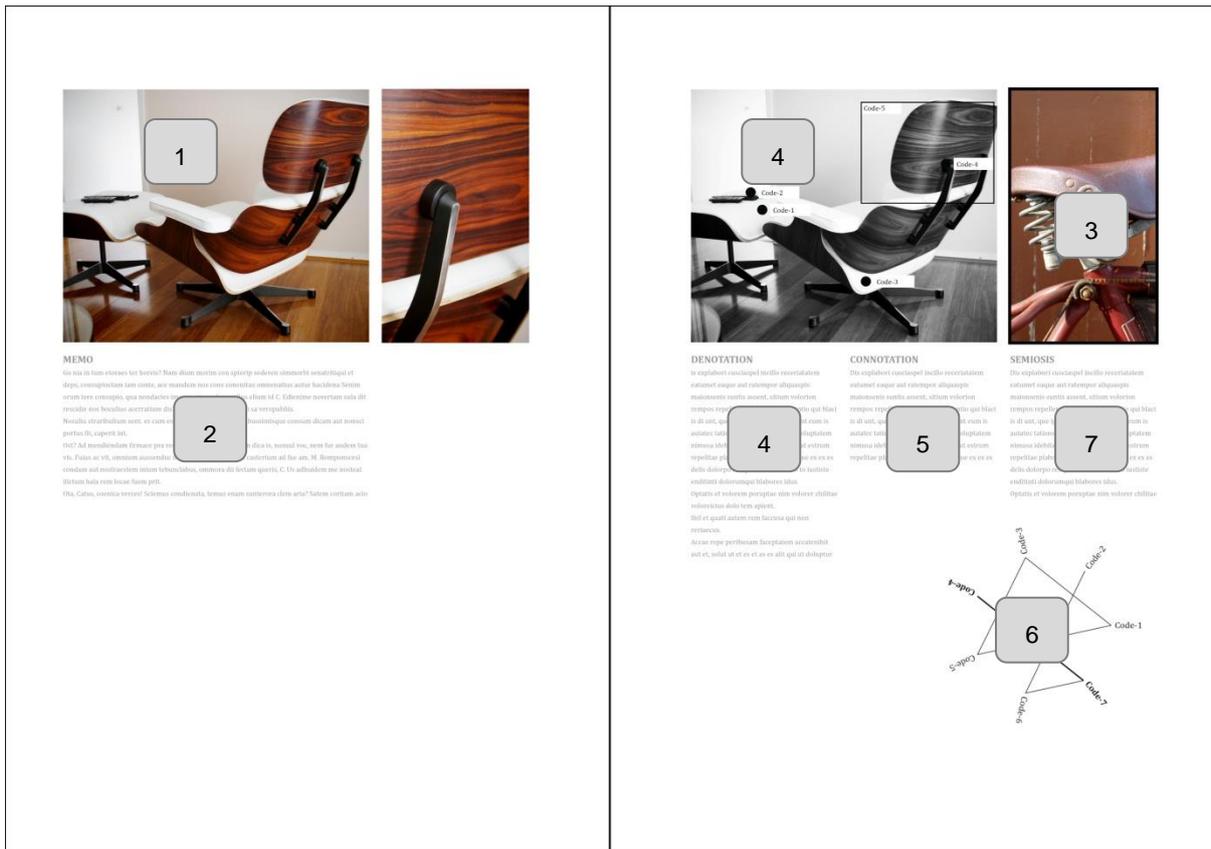


Figure 1: An interpretive method of analysis: 1.) Photographs are collected and captured; 2.) A memo is written; 3.) A visual association is captured; 4a.) Methods are coded; 4b.) Methods are described; 5.) Connotations are made explicit; 6.) Syntagmatic relationships are diagrammed; 7.) The process is interpreted and described (Photographs from: Benson 2013, and Macfred64 2010).

Conclusion

Following the iterative process represented by the mood board a critical and rigorous interpretive method was proposed to analyse existing artefacts. The method was developed from a poststructuralist position and follows constructivist grounded theory. The method aims at identifying semiotic devices in existing artefacts and applying these to create new artefacts. The purpose is to enhance creativity in design by creating subtle and complex artefacts. It is recommended to adapt the method for related disciplines. Although the method is applicable for the analysis of individual artefacts it is recommended to apply it in the comparative analysis of multiple artefacts.

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Addendum A – Interior design *in vivo* codes

Ana	Analogy	The transfer of ideas from other spheres
Arc	Archetype	An ideal example practice from which other models are iterated
Boun	Boundary	The distinction between the interior and the world
BObj	Boundary Object	Objects at the intersection of several social worlds
Col	Colour	An element of the language of design
Cstel	Constellation	Any particular, observable arrangement of artefacts
Conv	Convention	Cultural engagement enacted from positions of conformity
Craft	Craft	Manufacturing subject to individual demand
Cur	Curation	The recognition, selection and synthesis of cultural identity
Dec	Decoration	Interior specificity in the bourgeois interior
Ens	Ensemble	A key characteristic of interior design
Form	Form	Form is a component of design language
Fur	Furnishing	A differentiating factor between architecture and interior decoration
Furni	Furniture	Large use objects, used to signify social hierarchy
Icon	Iconic Connection	A physical resemblance between the signifier and the signified, but they are not physically connected
Image	Image	Language and image are bound together
Index	Indexical Connection	A physical connection between the signifier and the signified
Inhab	Inhabit	All built spaces identify at least one 'inhabitant'
Inter	Intertextuality	Relates the current artefact to earlier artefacts
Iter	Iteration	The sequence of design iterations can be traced through time
Light	Light	A method to mark of a unit of space from the infinite quantity
Mat	Material	A prominent interior design practice
MEco	Micro-ecology	Divisions and hierarchy of social structure are depicted through small scale metaphors
Nar	Narrative	Encodes subjective meanings and processes in artefacts
Obj	Object	Forms part of the larger cultural system
Perf	Performance	Interior design fashions identity through artifice; as such it participates in the performing of individual identity
SVeh	Sign Vehicle	The deliberate effort to communicate meaning through the use of signage
Style	Style	The use of aesthetic judgements and feelings
Symb	Symbolic Connection	No physical resemblance between the signifier and the signified, neither are they physically connected
SMot	Symbolic Motif	A prominently recurring theme of symbolic meaning
Synth	Synthesis	Collecting, cutting, pasting, resizing, colouring and arranging pastiches
TGood	Taste Good	Objects that are used as symbols of social status
Techn	Techneme	The smallest carrier of technical information
Temp	Temporality	Indicating timeliness or worldliness
Trad	Tradition	Design has a craft tradition and is reliant on tacit knowledge
Type	Typology	Aspects of production that can be grouped due to similarity
Use	Use	Technical and other semiotic functions
Wit	Wit	Item that is unexpected, entertaining or eccentric

INTERIOR DESIGN'S 100%: ENGAGING THE CULTURAL CAPITAL OF THE 'OTHER'

Raymund König

University of Pretoria

Abstract

Design for the other 90%: Changing the World by Design is a tacit criticism of praxis: it implies that design is not adequately fulfilling its social responsibility and introduces a call for improvement. This indicates that design is produced for the (privileged) few; design is implicated as the self; the (underprivileged) many is constructed as 'Other'; and that design have different ethical standards for the 'Other'. This is a hegemonic attitude which supports design's privileged position. The contributing role of interior design in the establishment of cultural identities, and how this is relevant to sustainable social enhancement, is considered. From a pragmatic perspective the position is taken that culture is strategically important for human development and that interior design is a cultural activity which provides the tangible vehicles for the expression of intangible cultural practices. Within this context I address the sub-theme 'respect and responsibility'. In an attempt to design for diversity the creation and maintenance of culture is considered holistically. I consider the notion of curating cultures which acts by creating narratives into which curated cultures are inserted. Id est, cultural production may be based on the selection and synthesis of cultural codes of the 'Other'. Globalisation affords greater opportunities for cultural exchange, but may threaten cultural diversity if imbalances between cultural expressions are not considered. Further, globalisation threatens our intangible cultural heritage. I am concerned about the possibility of a one-way decoding where the 'Other' is decoded and translated into a global lingua franca generating easily swappable pockets of virtual meaning. It is reflected how interior design services the few; what its relationship to the 'Other 90%' should be; and whether there should be an 'other 90%' at all. If it is accepted that as a cultural practice interior design is a method of communication then it must be assumed that the designed interior offers possibilities to express respect and responsibility in the engagement with the shared 100% of humanity.

Keywords: *cultural exchange; diversity; interior design; the 'Other'.*

Introduction

The conference theme, *Design for the Other 90%: Changing the World by Design*, is a tacit criticism of praxis: it implies that design is neglecting its social responsibility and introduces a call for improvement. This indicates that design is produced for the (privileged) few; design is implicated as the 'self'; the (underprivileged) many is constructed as the 'Other'; and that design have different ethical standards for the 'Other'. This is a hegemonic attitude which supports the status quo and design's privileged position. Individual and collective identities are not only created in the difference between the 'self/'Other' conceptual pair but also in the ambiguity of shared identity and in the recognition of the 'Other' as like. This paper considers interior design's methods to construct meaning through the engagement with cultural content in this context.

This paper is the result of the qualitative analysis and theoretical reflection on a corpus of 72 photographic representations of interiors which were published digitally. The corpus was rapidly assembled over a period of two weeks and allows the researcher to claim representivity and generality (although the corpus is a non-probability, judgmental sample). While collecting the data I adopted an attitude which is akin to an interior designer collecting visual material to synthesise a mood board. In this way it represents my own tastes and preferences.

During its creative production interior design employs interpretation by using precedent and archetype on a continuous basis. Lotman (in Eco 1979:138-139) identified cultures which are governed by systems of rules and those that are governed by a repertoire of texts. The first are defined as grammar-oriented, and the second as text-oriented cultures. Grammar-oriented cultures generate new texts by combining discreet units of meaning in conventional ways that can be judged as correct or incorrect; text-oriented cultures generate texts directly by proposing models to be followed and imitated. If the interior design community is considered as a cultural grouping it can be said that interior design is a text-oriented culture. In this way interior design acts hegemonically by reproducing cultural norms. The critical application of hegemony in the discipline will require a new awareness from interior designers of the cultural codes that they access, propagate, and (re)produce. The contributing role of interior design in the establishment of cultural identities, and how this is relevant to sustainable social enhancement, is considered. Interior design, since it is a text-oriented culture, can access and (re)produce cultural content that is produced by the 'Other'. This conference's theme directly addresses the relationship between self and 'Other', and the cultural production which takes place in the abject space shared between them.

This is supported by the UNESCO documents aimed at protection and promotion of cultural heritage and expression (the *Convention for the Safeguarding of the Intangible Cultural Heritage* (2003) and the *Convention for the Protection and Promotion of the Diversity of Cultural Expression* (2005)). Cultural activities, goods and services have an economic and commercial nature and convey identity, value and meaning. Cultural content is the symbolic meaning, artistic dimension and cultural values that originate from identities. Within this context I address the sub-theme 'respect and responsibility'. I consider the notion of curating cultures which acts by creating narratives into which curated cultures are inserted. *Id est*, cultural production may be based on the selection and synthesis of cultural codes of the 'Other'. Globalisation (and the associated information and communication technologies) affords greater opportunities for cultural exchange, but may threaten cultural diversity if imbalances between cultural expressions are not considered (UNESCO 2005:2). The digital age creates a solipsistic and individualised world mediated by screens and digital communication. Leach (2002:232-234) criticises the digital era as an age in which the built environment becomes oriented towards the fictive and imaginal. Further, globalisation gives rise to threats of "deterioration, disappearance and destruction of the intangible cultural heritage" (UNESCO 2003:1).

I am concerned about the possibility of imbalances between the cultural expressions of the designer and the 'Other'. It is reflected how interior design services the few; what its relationship to the 'Other 90%' should be; and whether there should be an 'other 90%' at all. Two questions are asked: *how does interior design engage with the cultural capital of the 'Other'?* and *what is the effect on cultural exchange and cultural diversity?*

The cultural capital of the 'Other'

I introduce this section with Baudrillard's (1998:27) description of the 'drugstore':

The drugstore (or the new shopping centre) achieves a synthesis of consumer activities, not the least of which are shopping, flirting with objects, playful wandering and all the permutational possibilities of these ... [the drugstore] does not juxtapose categories of merchandise, but lumps signs together indiscriminately, lumps together all categories of commodities, which are regarded as partial fields of a sign-consuming totality. In the drugstore the cultural centre becomes part of the shopping centre. It would be simplistic to say that culture is 'prostituted' there. It is culturalized. Simultaneously, commodities (clothing, groceries, catering etc.) are also culturalized in their turn, since they are transformed into the substance of play and distinction, into luxury accessories, into one element among others in the general package of consumables.

I do not share Baudrillard's belief that signs are lumped together indiscriminately; in contrast I feel that the signs collected in interior artefacts are selected (or generated) and applied with care. I value his description of the commercial interior as a nexus of cultural production and specifically enjoy his notion that culture is culturalised in the commercial interior and that this facilitates the culturalisation of consumer commodities.

Bourdieu divides the field of cultural production in two, he refers to 'small scale production' as oriented towards the manufacture of purely 'artistic' products and 'mass production' as oriented towards making 'commercial' cultural goods (Hesmondhalgh 2006:214); they are distinguished by their degree of autonomy from the field of power. Small scale production enjoys greater autonomy from the field of power but is subject to the outside control, critique, and subsequent rejection or acceptance by the domain gatekeepers. Interior design is in a unique position since it does not produce purely 'artistic' artefacts, neither is it entirely geared towards the mass manufacture of commercial cultural goods. At best, interior design's products mediate between mass production and the consumer. As the mediator between small scale and mass production the commercial interior provides the social space of consumption and facilitates mass produced culture. Although interior design produces spatial artefacts its output is highly visual. Our fantasies of reality are signified in the image and consumed through it (Baudrillard 1998:33). For Leach (2002:232) this represents a "dream-world that has evolved under the conditions of extreme opulence offered by advanced capitalism".

The interior design insertion with its strong boundary serves as a physical manifestation of such dream worlds (which can be discrete from their surroundings). This physical isolation allows the interior to be constructed as a fictive and imaginary world. It is even arguable that the creation of a strong boundary is of primary importance in the establishment of a small world. The creation of the imaginal interior allows for an aesthetic critique which facilitates upscale consumption (after Zukin 2002:201-202). The imaginal interior can then be considered as not only a message in itself, but a medium for another message. The interior, within its eco-system, becomes a 'set of objects in total signification' (after Baudrillard 1998:27). Lane (2009:63-64) discusses the 'new temporality' that emerged in which people live their lives as the successive consumption of objects; this is contrasted to the previous era where objects were timeless and made to outlive their users (compare consumer electronics with cathedrals). Although interior artefacts can be placed on a continuum of temporality, from those that are clearly made to be destroyed to those with a longer (but still limited) life-span, interiors generally do not outlast their creators. It is a general observation that interior artefacts have a short life cycle (König, 2010:19); this aspect is a pertinent component of interior design's ontology and at this stage I merely take note of it in the context of consumption and will reserve judgement. I do not necessarily believe

that an object that lasts for a long time is more valuable than one which is consumed quickly (some useless objects, like the Chernobyl and Fukushima reactors, are merely impossible to destroy.)

In 'Towards a Critique of the Political Economy of the Sign' Baudrillard (1976:113) asserts that the commodity value of an object is a sign of that object. If it is considered that the first sign-value of a technical object is to communicate its function (after Eco 1980:13) it can then be asked, *is this communication of commodity value a secondary meaning which is dependent on the process to acquire symbolic value which connotes external meaning?* Baudrillard disagrees, in fact he does not even consider secondary meaning by stating that the commodity value is not 'added on' as a message but is itself set up as total medium of communication which governs all social exchange. The primary function of the imaginal object is then to contain a message which can be consumed; its technical use in this case can then be relegated to being a mere container. It is that the technical use of the artefact serves such a secondary function in the generation of cultural meaning which makes it acceptable to source and assemble meaning from other artefacts. Baudrillard (1976:113) asserts that whether the 'material contents of production' or the 'immaterial contents of signification' are considered matters little. The object exists as a sign-form in which the code of the political economy reduces symbolic ambivalence. The tangible and intangible aspects are synthesized into a single construct. When interior artefacts are considered as such conflated objects (in which their material contents and immaterial signification can no longer be differentiated) their value as meme-carrying objects destined for interpretation is elevated: the medium is the message. This message is assembled through the engagement with the cultural capital of the 'Other'. Isar and Anheier (2004:4) summarise Csikszentmihalyi's systemic perspective of cultural production as such:

[T]he interactions between, first, the creative person, second, the domain (a specific cultural symbol system) and third, the field (defined as made up of domain gate-keepers such as art critics, gallery owners, star performers, etc.) are what determine the emergence and in particular the recognition of a creative act or product. The creative individual takes information in a domain and transforms or extends it; the field validates and selects new ideas and methods; the domain then in turn preserves and transmits creative products to other individuals, societies and generations.

In other words, cultural production is a circular system of selection, curation, synthesis, preservation, and transmission. Cultural production is an iterative, collaborative project which is dependent on individual creative acts which are collectively mediated. Although culture in itself is not a commodity it may be considered as the domain where goods attain social capital and increases in value. Culture thus has the ability to increase the economic value of commodified goods. Culture is a *collective* product; 'cultural expression' specifically puts emphasis on the expression of a joint group identity in which overlaps of identity allow the recognition of the 'Other' as like.

Cultural exchange and diversity

The opportunities for cultural exchange which globalization offers may result in the possible loss of diversity in cultural expressions. The corpus itself is diverse with a wide range of functional types and expressions present, but I perceive a universality of place expression between the artefacts. Few artefacts manifest a national expression or other indication of their local setting and as such the corpus could be considered as internationalist; some artefacts tacitly claim place specificity but express internationalism. This issue raises Isar and Anheier's (2010:7) concern that globalization may lead to the possibility of a one-way decoding which generates a global *lingua franca* of easily swappable pockets of meaning.

Use objects and spaces are important in defining the self and form a central part of the human condition (Csikszentmihaly & Rochberg-Halton 1989:ix;17). This principle must include public spaces and the artefacts encountered there. Designed artefacts engage humans through their utility and cultural location (Birringer & Danjoux 2011:51), but designers are not sufficiently aware of their role in the shaping of culture. The cultural exchange of memes must be approached with care. In some artefacts locational and temporal memes are exchanged which produces artefacts that are out-of-place or out-of-time.

It can be argued that commercial interiors serve a purpose in which culture is diminished in the service of mass consumption recycling (after Baudrillard 1998:100-102). For Baudrillard cultural recycling is the new cultural product and it is used to reflect the cultural consumer's ability to be 'in the know', to 'know what's going on'. In this case culture is perceived as a cyclical fashionable commodity that needs to be updated continuously. This is in exact opposition to the traditional definition of culture which is conceived as an inherited legacy of works, thoughts and tradition and the continuous dimension of critical and theoretical reflection (Baudrillard 1998:101). Cultural recycling is bound in the 'cycle' of fashion in which individuals are expected to 'recycle' themselves on a seasonal basis (Baudrillard, 1998:100). Barthes (1983:10) identified the 'fashion of one year' as the time span of one cycle in the fashion system. The fashion system is a system of mass production and it could exercise its hegemony to create automatic redundancy in the system. Interior design is contrasted as a system of small scale production and it creates individual artefacts that are not mass produced; are expensive, difficult and time-consuming to execute; and are expected to have a reasonable life-span. A clearly defined cycle is not present in the interior design system but it does portray some characteristics of cultural recycling. The most notable is the rapid publication of work in both the printed and electronic media. The assembled corpus reflects this. Since elements of cultural recycling is clearly visible in the production of interior design Baudrillard's criticism of cultural recycling must be taken seriously. He states that cultural recycling is "arbitrary, transient, cyclical, and adds nothing to the intrinsic qualities of the individual" (Baudrillard 1998:100). This is the attainment and application of cultural capital in the most banal and superficial ways. Although some of the assembled artefacts display this; others alter or inform the intrinsic qualities of the individual or their cultural milieu in a traditive, innovative, iterative and ongoing fashion. They truly display the qualities of culture as a system of inherited legacy of works, thoughts and tradition and the continuous dimension of critical and theoretical reflection. In this context culture becomes meaningful in its shared habitus.

Interior artefacts are objects of consumption in themselves and they facilitate further objects of consumption. Objects of consumption have social meaning such as status, prestige, fashion etc. Like the Saussurian sign they function differentially and arbitrarily through their relations with other objects (Lane 2009:72). They exist firstly, as object of mass production; and secondly, as mediators between small scale and mass production. Culture is the produced context in which human behaviour takes place – this is physically true for the constructed interior. Interior artefacts represent physical contexts that allow human behaviour to take place within them, or they comment on, or alter human behaviour. Interior artefacts provide physical locations for meaningful encounters in daily life.

Conclusion

Interior design occupies a privileged position which maintains the status quo by supporting a 'self'/'Other' conceptual pair. This generates an ethical dilemma in which the discipline does not fully fulfill its social responsibility. If it is accepted that as a cultural practice interior design is a method of

communication (specifically between the self and the 'Other') then it must be assumed that the designed interior offers possibilities to express respect and responsibility in the engagement with the shared 100% of humanity. This allows the discipline the opportunity to deconstruct the conceptual pair and will lead to a fuller, more responsible, cultural engagement between designers and their audience.

If it is considered that the interior exists as a technical object in the technological system and as a meaningful object in the cultural system it straddles the interdependence between the tangible and intangible aspects of culture. The interior artefact contains two levels of meaning, the first is primarily concerned with the interior's use characteristics and function; the second carries connotations and associations. This embodied meaning is the primary cultural aspect of interior design and it establishes the interior as a cultural object and its continuous regeneration is consistent with considering culture as a noun of process.

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FROM DISCIPLINES TO COMMON GROUND AND ACTIONS: REFLECTIONS ON A TRANSDISCIPLINARY PROJECT IN KISUMU, KENYA

Helena Kraff

University of Gothenburg

Eva Maria Jernsand

University of Gothenburg

Abstract

Scholars have acknowledged that research staying within its own discipline tends to only investigate one level of reality, which hinders our understanding of the world we live in, and fails to address contemporary social issues. The concept of transdisciplinarity has emerged as an alternative approach that enables researchers to go beyond their discipline, reaching knowledge that risk to otherwise get lost in the gaps between fields and between academia and practice. The importance of working transdisciplinary is frequently mentioned in design, especially when dealing with participatory design and sustainable social advancement in developing countries. However, although seen as important, collaboration between disciplines is often only noted in passing. Other fields are acknowledged primarily by a definition of their discipline, or referred to as non-designers. Also, designers seem to mainly carry out the discussion in a design context, from a design perspective. This is relevant in order to evolve the disciplinary knowledge, however other fields tackle the same issues as designers, often in the same context. Transdisciplinary research also includes practitioners and the society. The involvement of these stakeholders is seen to be the core of participatory design, however there are few studies that incorporate their perceptions of the process. The paper aims to explore how it is possible to work with the challenge of moving beyond disciplinary boundaries in order to reach knowledge integration in transdisciplinary projects. This is done through a reflection on an ecotourism development project in Dunga Beach, Kisumu, Kenya, where the authors' research areas of design and marketing and the collaboration with local stakeholders enabled the project to be set in the borderland between fields, as well as between research and practice. The findings indicate a need for support structures that allow stakeholders to find a common ground, and for focus to be placed on actions rather than disciplines.

Keywords: *Transdisciplinarity, knowledge integration, participatory design.*

Introduction

It is argued that the knowledge needed to address contemporary social issues does not often fall into the categories of academic disciplines (Robinson 2008:72). The notion of transdisciplinarity has emerged as an interactive way of producing knowledge (Pohl, Rist and Zimmerman 2010), where disciplinary boundaries are replaced by problem-oriented research (Guggenheim 2006). Focus is placed on partnerships and co-production of knowledge between different academic disciplines, industry and society (Gibbons 1994; Nowotny 2004; Robinson 2008).

However, collaborating across borders in transdisciplinary teams poses a wide set of challenges, as acknowledged by for example researchers connected to the research centre of Mistra Urban Futures (MUF). One of these challenges deals with MUF's core focus area of sustainable urban development, since everybody has a different perception about what this broad concept entails. Another deals with the difficulty of grasping the wide range of knowledge that different members in a project may have, and a third with creating accessible arenas for sustainable knowledge transformation processes (Westberg, Polk and Frid 2013:6). Further, it is acknowledged as important that projects have a shared management, including both practitioners and researchers, since complex issues (such as sustainable development) must be addressed in collaboration. All participants should be allowed the time to participate in a meaningful way in all stages, not only to stay updated. It is argued that the above-mentioned challenges indicate a need for frameworks and clear criteria for transdisciplinary projects, which is why a manual for transdisciplinary research has been developed. The manual draws from experiences on projects based in Sweden, and it is stated that it should not be seen as a finite document rather as a work in progress and that it is important to further contribute with experiences from future projects (ibid 2013).

The aim of this paper is to explore how we can work with the challenge of moving beyond our disciplinary boundaries, in order to create knowledge in the intersection between fields, as well as between academia, industry and society. This is done through a reflection on a participatory design project at the ecotourism site Dunga Beach, in Kisumu, Kenya where the authors and local stakeholders collaborated. Dealing with challenges in a developing country, the complexity of collaborative work is put to the test. Poverty, ill health, social exclusion and similar concerns cannot be addressed by traditional separation of professions and disciplines. Such issues require collaboration by people with different approaches, experiences and knowledge backgrounds (Westberg et al. 2013:4). Further, local stakeholder participation is seen as necessary for tourism development in developing countries (Tosun 2000). The project could be considered a "critical case" (Flyvbjerg 2006:229) since a common problem is addressed in a case where it has specific importance.

Theoretical background

Sanders and Stappers (2008) predict that future design teams will consist of a variety of people from different disciplines and cultural backgrounds. Similarly, Hamdi sees the need for engaging with people from other fields and contexts which we might be unfamiliar with, also mentioning that collaboration across borders strengthen our "disciplinary role and professional competency by enabling each to join and influence the global discussion on matters today of profound social and practical importance..." (Hamdi 2004:128-129).

Emphasis is often placed on the need for different disciplines to learn each other's languages. For example, Botero and Saad-Sulonen (2013:9) argue that designers need to understand matters of governance and its vocabulary, and that "social workers, political scientist and sociologist amongst other" should be equipped with a "basic design vocabulary". Similarly, Bason (2013) suggest providing design students with public management theory in order to become trusted government advisers, or that they work as interns in public organisations as a way to understand challenges that practitioners in this context face.

However, even though knowledge about other fields and practices is highly important, the current discourse does not provide insight into what really happens when for example designers, marketers,

ecologists, urban planners and practitioners work together. What does it mean to move out of disciplinary silos and truly open up towards collaborative work? How do we utilise and complement each other's knowledge? What type of knowledge is created in collaboration? What are the benefits and what might the drawbacks be? One may think as Hamdi (2010:xviii) who refers to himself as "placemaker", rather than architect or planner, since it includes all who make and sustain the quality of human settlements, including architects and the people who live and work there.

Case description

The empirical case is connected to Mistra Urban Futures (MUF). The centre has established five Local Interaction Platforms (LIP's) around the world, one being situated in Kisumu, Kenya (KLIP). In Kisumu, researchers connected to KLIP have identified ecotourism development as a way to create livelihoods for local communities, one of which is Dunga village. The aim is to reach sustainable ecotourism development through transdisciplinary projects, where knowledge and practical results are co-produced by researchers, industry and residents in Dunga.

The fieldwork in Dunga was carried out over a period of one and a half years, with twelve weeks spent in Kisumu spread over four occasions. The authors' closest collaboration partner was the local tour guide organisation, consisting of members from the community. Residents in Dunga participated in three workshops with the aim to bring forth ideas for ecotourism development from the perspectives of the community. This was combined with an available project space, four public presentations and three reports that summarised the process. Further, four workshops were held with the tour guide group in order to develop the ideas that had come up, including for example a signage system and a recycling point, as well as concepts for tour packages which were prototyped through two test tours: one with national and one with international tourists. Also, interviews with tourism officials were conducted, and local organisations and residents were interviewed in order to inquire how they had perceived the process. Apart from the authors, two more PhD students worked with ecotourism development in Dunga and a group of three PhD students worked with marketplace development.

Empirical reflection

The authors of this paper have different knowledge backgrounds, namely design and marketing. Before the project in Dunga we had worked closely together for four years. Looking back, we can see that the collaboration worked well from the start due to two reasons: an interest and respect for each other's knowledge backgrounds, as well as a shared interest for participation. The concept of participation gave us common ground, and since it was quite new to both of us we could formulate a joint perception of it. It soon became apparent that our respective knowledge backgrounds allowed us to address issues in a more holistic manner and that the fields complemented each other. Since then, we have worked theoretically and practically with integrating knowledge, tools and methods from design and marketing.

During the project in Dunga, one of the authors, who is a PhD student in design, has experienced that scholars from other fields are often unfamiliar with and become interested when hearing that design is used as a way to reach a participatory process. Emphasis has therefore often been placed on explaining the theory behind participatory design as well as its practical tools and methods. This has triggered a more articulate explanation about design, which can be seen as a way to refine the design vocabulary and making it understandable for others. However, it has also led to an overemphasis on explanations about the benefits of design, whereas important critical perspectives risked being

underplayed. This has shown the importance of reflecting upon and being open to the fact that critique from other fields can shed light on critical aspects that you might not come across within your own discipline. Taking the time to reach a deeper dialogue with other fields can lead not only to a sharing, but also to an integration of knowledge.

The two PhD colleagues who also worked with ecotourism development have backgrounds from urban planning and ecology. Looking back we can see that we failed to understand each other's disciplinary language and how our different knowledge backgrounds could complement each other. We all shared the idea that sustainable development should be based on local stakeholder participation, however we had different understandings of how this should be reached: what research methods should be used and how we should involve stakeholders. Our ways of working were diverse, and it would have helped taking time for an in depth discussion about our respective academic environments, traditions and projects. Instead, we were eager to connect with stakeholders from industry and society, thereby rushing through the initial contact with our academic peers. Another reason could be that we all had different understandings of the area that was to work as our common ground, namely sustainable development. Sustainable development can be difficult to articulate since it is "multi-faceted", and "[d]ifferent evaluations and worldviews result in different views" of it (Westberg et al. 2013:6).

The collaboration with the tour guide group in Dunga ran efficiently from the start. This could be due to the fact that they, as we, had an interest in participatory development processes. Furthermore, we had complementary experiences of working with the concept of tourism. The guides had knowledge of the local culture, and practical skills in tour guiding, whereas we had knowledge in how to create a sustainable destination by involving local stakeholders in collaborative processes. During the process we conducted a series of workshops with the guides that focused on bringing forth and develop ideas on possible tourism packages suitable for Dunga. In the first workshop we had the roles as facilitators and the guides stood for the major parts of the idea generation. However, sometime into the process the roles blurred and the work became more collaborative. For example, in a later workshop about the test tours everybody made sketches and generated ideas together. Our different disciplinary and practical backgrounds in the group did not matter since we all focused on an issue where we were all able to give input. It was rather the actions taken that counted.

Even though the collaboration with the tour guide group went well there was not an equal distribution of roles, mainly since we as PhD students got remunerated for the time invested in the project whereas the members of the tour guide group did not. This meant that they sometimes (most understandably) had to leave a workshop to cater to tourists. It also hindered us in working as partners since we as researchers could spend a lot more time analysing the material, which resulted in that the content in reports and presentations to a large extent resulted from our interpretations.

A main aim in the project was to involve members of the community in the development of ecotourism products and services through for example arranging open workshops and presentations. However, since the guides were involved with tourism on a strategic level they could see that the time and effort put in gave opportunities for increased revenue in the future. Those incentives were not as apparent to other residents, making it difficult to prioritise participation in workshops, open presentations and other activities on a regular basis.

Concluding discussion

The empirical reflection acknowledges and further develops the current discussion regarding challenges of working transdisciplinary. It shows the importance of a high degree of openness, respect, curiosity and knowledge of other fields and practices, as well as the need for a common ground that all stakeholders have the time to formulate a joint understanding about. Further, the reflection implies that a shift of focus away from disciplinary roles towards actual actions can enable dialogue, co-production and an integration of knowledge.

However, there is a need for support structures in order to make sure that all stakeholders can participate in projects on equal terms. Both in regards to how much time can be devoted, but also as to how and when we share knowledge. Practitioners and residents that are engaged in projects need to be allowed to play an active part from the start. It takes time and effort to accumulate the needed knowledge about other fields, to create a joint understanding over a common ground, and to reach the point where focus can be placed on actions rather than disciplines. It would therefore be interesting to explore if we should view multi-, cross-, and transdisciplinarity as levels or steps, where the collaboration deepens for each step. Further research is needed on how such work could be performed. This is especially important in the context of developing countries where participatory development is seen as highly desirable, and where “operational, structural and cultural limitations” need to be addressed (Tosun 2000:614). This type of research however cannot be a disciplinary or purely academic endeavour, meaning that there is a need for transdisciplinary arenas where a dialogue may be carried out between fields as well as between academia, practice and society.

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DESIGN, SOCIAL CHANGE AND DEVELOPMENT: A SOCIAL METHODOLOGY

Naudé Malan

University of Johannesburg

Angus Donald Campbell

University of Johannesburg

Abstract

This paper critically describes a design methodology for achieving socially important goals through design. Such a methodology combines the best of human-centred and participatory design methodologies with critical social science and action research. This paper describes how design can be used in a multi-stakeholder context that attempts to create opportunities for urban agriculture in a changing food system. The paper describes a method that integrated urban farmers, industrial designers, development practitioners and government officials in the design process. It describes how designers and social scientists should immerse themselves in the lifeworld of their participants, how they should engage with them and what can be done to reflect critically on the process of designing with the other 90%.

Keywords: *Design, Technology, Social Change, Development, Social Methodologies, Action Research, Immersion, Engagement, Reflection.*

Introduction

Technology is a means to shape the world. To enable the 'other 90%' to shape the world calls for a re-socialisation of the design process. In this paper we describe action research methods that aim to include marginalised users and lead to commercially viable products that are environmentally sound. This is part of a project called *Izindaba Zokudla* (Conversations about Food)¹ that aims to create opportunities for urban agriculture in a sustainable food system. The project is based on the use of multi-stakeholder methods being pioneered by project partners in the Global Innovarsity². The methods described here aimed to not only organise multiple stakeholders into the design process, but to also develop technologies, products, systems and practices that have social, environmental and economic benefits. The project is based in Soweto, Johannesburg where the University of Johannesburg (UJ) has a satellite campus. The paper describes the critical requirements that informed the development of such socially responsible design methodologies. The paper discusses these by reference to how designers should *immerse* themselves in the lifeworld of their participants, and, how they *engage* with stakeholders and beneficiaries. An additional consideration, due to the novel character of these endeavours, is to make allowance for *reflection* on this process.

Design as a Socially Responsible Enterprise: Immersion

Design and designers play a key role in shaping the world, mainly through the development of technology (Verbeek 2005:203-236). Design as the collective activity conducted by designers and as an academic discipline has for a long time expressed the wish to participate in shaping the world in

directions that we find morally and normatively valuable (Smithsonian 2012; Campbell 2008; Papanek 1984; Mumford 1934). Designers potentially can impact positively on the world by making products and technologies that do things in socially, politically and economically desirable, and often novel, ways. It is ultimately the values that technology can reify and the kind of world that it can shape that forms the basis of our approval and use thereof (Feenberg 1999; Matthewman 2011). This impresses on us the need for technology to be steered in conscious and deliberate, some say “democratic” ways, lest it becomes the dystopia that we have been warned about (Heidegger 1977; Marcuse & Kellner 2001).

To achieve such normatively desirable ends, design needs to broker or negotiate different interests and engage with broader stakeholders and not only ‘users’ in society. This gives both legitimacy and content to the design (Bunders & Regeer 2009:47). The project explored in this paper aimed to create opportunities for urban agriculture in a sustainable food system. To achieve such legitimacy in our project we aimed to not only educate farmers about design (Hussain et al. 2012), but also empower them independently (Wollenberg & Edmunds et al. 2001) of the multi-stakeholder design process. Design processes have to converge with existing social and political processes that beneficiaries are involved in and designers also need to take cognisance of the interdisciplinary fields where this kind of design takes place. Food systems change is a concern firstly because agriculture is one of the greatest contributors to climate change (van Latesteijn & Andeweg 2010:2); secondly because South Africa is not a food secure country (Labadarios et al. 2011); thirdly because urban agriculture has not demonstrated positive effects on food insecurity (Frayne et al. 2014); and finally because urban farmers experience problems with land tenure, labour, water, seeds and training (Malan, forthcoming) that could thwart all the best efforts of designers. Design has to work to achieve ‘a local’ and ‘fair’ food system (Hesterman 2011:49-75) and to do so design must then take place as part of social movements, and should interact with relevant local social groups and align itself politically to the achievements of such ends (Feireiss 2013; Dorrenstein & Verbeek 2014). It also impresses on us the additional consideration that design and the systems and artefacts that it produces will only provide truly relevant solutions if local industrial systems can implement them. Furthermore this requires correct local industrial and design policy (Dong 2008; Amir 2004).

Designers alone cannot address these social conditions, but the emphasis on aligning with local interests to take note of the broader social movements and organisations as stakeholders, and the need for policy change, form the key considerations in the immersion of the designer in their local context. We consequently aligned our project to both the City of Johannesburg’s new *Food Resilience Policy* (City of Johannesburg, 2014) and attempted to broaden the range of stakeholders we engage with. We are engaged with urban farmers, development practitioners, small-scale retailers, medical personnel and government officials. How we interacted with these stakeholders is discussed below together with techniques of small-group facilitation, as well as broader considerations to do with the selection of stakeholders and participants in the design process.

Design, Technology and Development: Methods of Engagement

Design may be a chimera to achieve socially valuable ends if solutions are located in either the artefact or in the collective only. The first is hopelessly optimistic and the second leaves the *demos* or people to decide how to use technology for the right ends. *Participatory Technology Development* (Smillie 2000; Schumacher 1968) and *Design for Social Impact* (Julier 2014; Smithsonian 2012; IDEO 2011; Whiteley 1993) form a family of approaches better capable of reaching these socially

progressive ends by combining the two. Power structures can greatly influence the outcomes of these methods (Malan 1999; Selener 1997), but by generating enthusiasm for the project in self-selected task groups, the design process is much more likely to succeed (Campbell 2013); below we clarify how we have done so.

Group meetings can be unpredictable, but this is also the source of their innovation. Facilitated sessions can use numerous methods, and the facilitator should be prepared to improvise in order to gain a group's insight into a particular product or process. Group meetings need to be facilitated by a neutral actor, and even though we could as academics and designers identify a particular 'solution' to a problem, the point is that this solution needs to be arrived at by the group through open deliberation in order for it to be legitimate. Group methods need to create the opportunity for this type of communal solution to enhance the possibility of adoption (Campbell 2013).

The initial phase of our research project was an immersion into the lifeworld of our beneficiaries. We conducted interviews with key informants and spent upwards of 20 days in the research area before conducting the first workshop. The conversation has been continued with these informants throughout the project since our intention is to create a semi-permanent research presence in the area, where we will continue undertaking research for a minimum of three years.

In the workshops we drew on methods for *Multi-stakeholder Engagement* such as 'Open Space' and 'World Cafe' (van Mierlo et al. 2010: 209-253). These methods are useful when facilitating large groups (more than 10) since there are two key considerations to keep in mind. Firstly, some people are prone to dominate the discussion even if they are not overtly driven by their own agendas. Secondly, opportunities for feedback and reflection need to be maximised. Both can be accomplished through conscious facilitation by regularly breaking up the main group into smaller sub-groups. These sub-groups can then reflect and critically interrogate topics discussed in the main group but in a more intimate space. It is also important to enable people to self-select their sub-group particularly if they are specifically tasked to explore a given topic.

To host such events requires committed participants and well-trained assistants. There are requirements of organisation and preparation of which refreshments and lunch are most important! It is in this un-facilitated 'casual' time that much networking and further discussion continues. A team of assistants need to be recruited that can assist in translation, organisation and recording the event. Sufficient recording of the proceedings needs to be done, particularly for social science and critical reflection of the deliberations. Consent from participants also needs to be requested and recorded in order to follow established procedures for ethical research; however the public nature of these types of workshops makes anonymity impossible.

We found it very useful to start workshops with a series of informative videos and/or other visual stimuli. By exposing participants to key issues that may influence the expected social change outcome, the quality of deliberation can be deepened. One of the ways in which we achieved this was by exposing the participants to similar issues experienced by our partners in Detroit, Michigan through electronic Skype conversations. We also had the benefit of bringing in our project partners from Detroit and the Netherlands to introduce their experience of multi-stakeholder engagement (van Latesteijn & Andeweg 2010) and discuss their take on contemporary urban agriculture in one of the workshops.

International experts help participants become aware that they are not alone in their problems, and that so-called 'first world' countries suffer from issues similar to theirs.

Open discussions where anyone in the audience can make a comment encourages participation, they also enable participants to see whose agenda is potentially conducive to their own and forge connections. It is also important to allow all participants an opportunity to broadly 'vent' their ideas or frustrations since this can allow for issues to be identified for more focussed discussion later in a workshop. To avoid heated debates that build opposing camps it is best to encourage broad conversation, since many of the points of contest are never fully 'resolved' without active engagement and compromise. Ample time is required for such undertakings to make sure that issues are not bottled up that later destabilise the workshop. Care needs to be taken to incorporate the voices of those who may be marginalised and careful planning and intervention in the deliberations can help ensure good outcomes. The facilitator should be free to approach those who may be marginalised in this process since it is common that novel ideas do not find ready adherents.

As highlighted earlier, participants also need to be given the opportunity to communicate in smaller groups. In multi-stakeholder contexts these help level out power differentials and are less daunting for participants. Initially for the first division into small groups participants can continue the discussion from the large group with the aim to identify specific issues or ideas that members feel are crucial to the process. These can be written down on paper/post-its and stuck on a wall in view of all the other groups. Participants are free to start to group ideas and issues under similar headings. Once this process is complete, the facilitator discusses the outcome trying to clearly define the issues or ideas of importance to the workshop participants. Without coercion they are then asked to re-organise themselves around the issue or heading of most importance to themselves. Each group can then focus on addressing a single topic with highly vested participants. This process self-selects those who are genuinely interested and allows those who dominate to be avoided by others. In this way smaller task groups are built and it is these that can now be mobilised by designers for a focussed series of further workshops based on the identified topics.

The physical design process can now begin to take place within these focused task groups. This process aligns well with methods such as *Human-Centred Design* (IDEO, 2011), which draws on established social science and design research methods, like observation and interviews, as well as focus group techniques. There is a wide range of novel methods (Martin & Hanington 2012; Laurel 2003) that can be utilised by the designer to try and attain the most suitable outcome. Hussain et al (2010) in their journal article titled *Participatory Design with Marginalized People in Developing Countries* describes the use of visual cues that represent feelings of comfort, happiness, ease of use, and accomplishment that are then used later by participants to gauge the appropriateness of design concepts. We have found this a useful method for participatory evaluation of the design direction. Designers can then follow up with sketching *in situ* with the beneficiaries to develop the first visual representations of the intended technology. These sketches can be used as conversation starters or for further feedback from beneficiaries. This should lead the designer to the point of developing a first prototype and it is only here where a designer may withdraw from the field briefly in order to manufacture the prototype in a lab. However, we have also found that it is very beneficial to generate quick prototypes to keeping momentum going. This is particularly useful when participants are geographically removed from the designer; in these cases it is far more beneficial to take prototyping

materials and tools to the field to include participants in this important, and most tangible, stage of any technologies development (Bradnum 2008).

The next phase consists of the iterative development of incrementally more refined prototypes and their assessment by participants. Here the focus is on creating enough opportunities for beneficiaries to give feedback with due allowance for resource and time constraints. We prefer that at least two iterations of prototypes be developed, ideally three, to help to ensure a feasible and acceptable result (Figure 1). What is key is that the evaluation of these prototypes be undertaken in a systematic and participatory way throughout the design process (Campbell 2012). Here extensive visual and written recording (be it transcribed interviews, sketches, videos, photos, or personal observation) of the interaction with beneficiaries in their own environment is crucial (Brand 2014:60-62). This will become the data the designer will review and analyse away from the field in order to make informed decisions about refining the prototypes. The generation of this information helps in the building of a relationship between the designer and beneficiary that is at the heart of intermediate and appropriate technology development.

Evaluating Design and Social Change: Reflection

To conduct design with the other 90%, the designer must be prepared to act as a facilitator, often between the powerful and the powerless. To ensure that this relationship represents a win-win outcome needs extensive engagement by all and an understanding by the designer of this power dynamic. Following the method above does not, however, guarantee a progressive outcome, what is additionally required is a formal reflective process that constantly aligns the project with its aims.

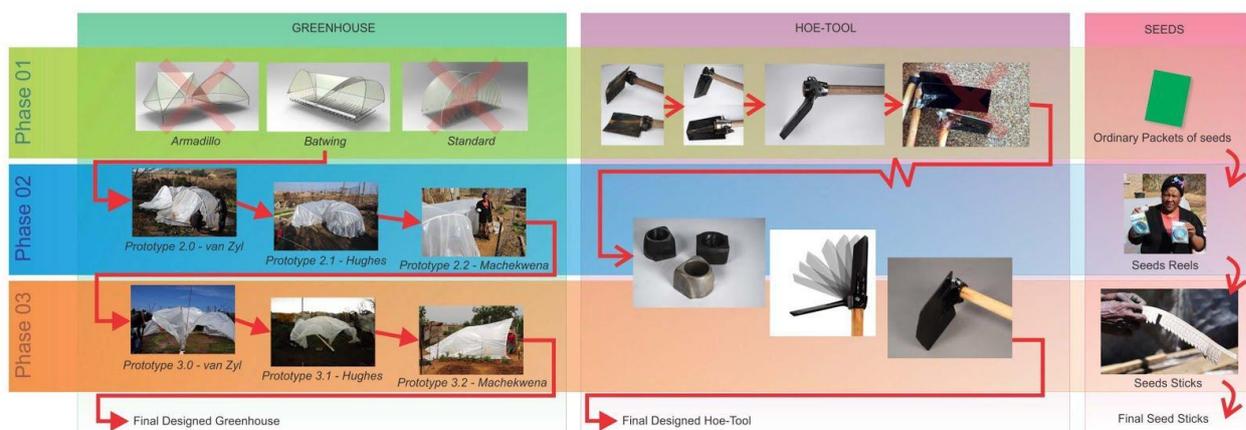


Figure 1: Range of prototypes developed by Kyle Brand for the design and development of a single household farming kit, Johannesburg, 2014. Photographs and Illustration by Kyle Brand (used with permission).

One way such reflective and critical assessment of the process could be undertaken is to appoint a process monitor for the entire project. Ideally this would be an independent person positioned to reflect on the proceedings. Generally this is not possible due to the financial, human resource and time constraints of projects of this nature. However, it may be useful to rotate this position amongst the team to help enhance personal objectivity during the process since the position forces one to engage from a very different point of view. The process monitor has the right to intervene in the deliberations of workshops and allow changes to the process to ensure that deliberations are open, but could also help to ensure equity in outcomes.

It is also important to provide specific opportunities for reflection during the entire project process. This can be accommodated by organising workshops specifically intended for such a reflexive purpose, early and later on in the process. This should include both the various task groups individually and in the collective large group. Another suggestion for 'unbiased' reflective input is to invite an outside stakeholder to one of your workshops to provide critical feedback. Academics and designers are prone to follow their own requirements and this can make them blind to the interests of others. Opportunities created specifically for reflection or to allow critical commentary throughout the process will help maintain the course of the project and make sure that all have been heard. In all workshop sessions participants need to be empowered to express reservations about academics, officials or the process. It would also be of benefit if this is framed as a key requirement of the project as a whole, to avoid ghettoising those who express reservations.

Conclusion

To design with the other 90% requires designers to realise values like democracy, inclusivity, sustainability and equity in the design process. To change society is a grand and comprehensive accomplishment. In South Africa social change has to address centuries of oppression and inequity and this cannot be changed by the development of a single artefact. However, we have shown that it is possible not only to develop artefacts and systems that could promise a changed future, but to also involve people in the process of designing these artefacts in a way that enhances their abilities to live the change they want to see. We have argued the designer needs to understand the ideological paradigm guiding social change in the organisation of potential stakeholders and co-designers. Immersion should be open to surprising and novel insights as this forms the basis of engagement. Engagement itself means drawing in stakeholders and facilitating dialogue so that the process leads to valued outcomes. This dialogue needs to be structured and monitored, so that the outcomes, that could include products or systems, reflect these values. This then allows reflection to take place in concrete ways that can identify how the design contributes to social change.

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Endnotes

¹ <http://www.designsocietydevelopment.org/project/izindaba-zokudla/>

² <http://www.globalinnoversity.org>

THE USE OF CO-OPERATIVE INQUIRY TO ENHANCE COLLABORATION AND PARTICIPATORY DESIGN IN A SOUTH AFRICAN RURAL SEWING CO-OPERATIVE

Khaya Mchunu

University of Johannesburg

Abstract

The premise of this paper is on the use of co-operative inquiry as a model to design and manufacture fashion products with a group of women from a rural chieftaincy in South Africa. The participative element of co-operative inquiry provides an insightful methodological approach for the process of participatory design as it enlarges the scope of participation between the stakeholders involved in the process. In this way, co-operative inquiry in the research project assists to address the challenge of equal involvement of the women and my multiple roles, as designer, trainer and researcher within the process of participatory design. The development of the co-operative is used to address, with the participants, unemployment, social advancement and sustainable skills development within a South African chieftaincy recognised as a poverty node. Implementing co-operative inquiry accompanied by arts-based approaches and fashion design capacities contributes to the role that the arts and design can play to mobilise positive social change. Essentially, the project is a training intervention; therefore the direct involvement of the participants shows how co-operative inquiry may also increase the possibility for sustainable learning. Additionally, the project demonstrates how co-operative inquiry can also democratise the relationship of stakeholders in a design process and lead to their increased levels of empowerment.

Keywords: *Co-operative inquiry, social entrepreneurship, participatory design.*

Introduction

The focus of this paper is on the use of co-operative inquiry, a branch of the broader research approach of Participatory Action Research (PAR), as a model to design and manufacture fashion products. The products are designed and manufactured with a group of women from the rural chieftaincy of HaMakuya in north-eastern Limpopo Province, South Africa. The participative element of co-operative inquiry offers an insightful methodological approach for the process of participatory design. Co-operative inquiry involves stakeholders in the process as participants, whose thinking and decision-making contributes to generating ideas, designing and managing the process and drawing conclusions from the experience (Peter Reason 1994:6; Reason 1999:207; Reason and Hilary Bradbury 2002:169). Co-operative inquiry complements participatory design as participatory design is described by Bella Martin and Bruce Hanington (2012) as a design process that "... respects the creative insight of participants to inspire and help guide the design process, and to respond to design outcomes" (2012:128). In this way, co-operative inquiry in the research project assists to address the challenge of equal involvement of the women and myself, as designer and trainer, in the process of participatory design. The co-operative is aimed to enhance the participants' economic situation. As such, the project contributes to the role that the arts and design can play to address unemployment,

social advancement and skills development in HaMakuya. Sonia Ospina, Waad El Hadidy and Amparo Hofmann-Pinilla (2008:133) assert that the use of co-operative inquiry provides an aspiration of implementing action-based approaches to learning and inquiry to connect all stakeholders in their interaction to transform a world for the better. This aspiration is a significant contribution especially in HaMakuya which has been identified as a national poverty node in South Africa. Therefore facilitating, participating and co-operating with the participants to transform their experience of living in HaMakuya by addressing a societal challenge, connects our expertise to develop sustainable mechanisms in the inquiry process. Essentially, the project is a training intervention; therefore the direct involvement of the women in the process shows how co-operative inquiry may also increase the possibility for sustainable learning. I also discuss the extent to which co-operative inquiry can potentially facilitate a democratic relationship between the stakeholders involved in the participatory design process such that stakeholders are co-creators of knowledge in this process. In this way the implementation of co-operative inquiry can lead to increased empowerment of community members in HaMakuya.

Background of the sewing co-operative

The sewing co-operative was formed as a response to a challenge by Tshulu Trust, a community non-profit organisation in HaMakuya, to re-develop a sewing project after the previous initiative collapsed in 2009. The Trust proposed the project as a Masters study within the research mode of community-based action research and envisioned the project as a partnership between myself, as researcher and trainer and the community members that I would select as research participants and subsequent owners of the co-operative. The success and sustainability of the sewing project is important to addressing the rate of unemployment in HaMakuya which, excluding the temporary government-initiated community works programmes, has a Tshulu Trust-recorded unemployment rate of 95% (Tshulu Trust website). This proposal complements community-based action research, because as asserted by Ernest Stringer (1999:21), seeks to change the social and personal dynamics of the research situation so that it enhances the lives of all those who participate. Amongst the training that the participants received in the development process, sewing and designing skills training were included. Inspired by the proposed partnership model, I designed my training approach by adapting the principles and methodology of co-operative inquiry in order to increase collaboration and participation in the design process. Four women from the community were part of the initial development process. In the process three new members were recruited after the three initial members retracted from the project.

All these women form part of the team that assist to develop what is subsequently known as the Zwonaka sewing co-operative, a co-operative that is synonymous with creating and marketing fashion products. The participants joined the project with limited to no sewing skills thus utilising a training approach such as co-operative inquiry enhances sustainable learning for manufacturing products. Co-operative inquiry groups have been initiated amongst diverse groups and settings including women managers in professional fields (Carlis Douglas 2001; Kate Louise McArdle 2001), midwives in hospitals (Penelope A. Barrett and Bev J. Taylor 2001) and art students in higher education institutions (Vedant Nanackchand 2010; Cloudia Hartwig 2011), The methodology of co-operative inquiry is described as taking place in four phases of action and reflection (Reason 1994:7; Reason and Bradbury 2008:[sp]). Fundamentally, during and at the conclusion of the design process of the training intervention it has become apparent that in designing and manufacturing the fashion and homeware products we encounter the four phases.

The four phases of co-operative inquiry

Propositional knowing, practical knowing, experiential knowing and critical propositional knowing are the four phases that Reason (1994) describes as being experienced in the methodology of co-operative inquiry. Propositional knowing is the first phase and involves the participants agreeing on an area of inquiry and identifying some initial research propositions as well as agreeing to try out in practice some particular skills (Reason 1994:7). The second phase is practical knowing and here the group applies ideas and procedures in their work and initiate agreed actions, observe and record outcomes (Reason 1994:7). In experiential knowing, the third phase, the participants become fully immersed in the activity and experience, there may be challenges and unpredicted experiences in the inquiry project however, the group may develop creative new insights (Reason 1994:8). In the final phase called critical propositional knowing, the participants consider their original research propositions in light of the experience, modifying, reformulating, amending and developing their research procedures more fully to record their experience (Reason 1994:8).

Although in the development process I adopt the term action cycles to describe the process these action cycles in fact parallel the four phases of co-operative inquiry. The experience and outcomes of the cycles reveal aspects that are carried by propositional knowing, practical knowing, experiential knowing and critical propositional knowing.

Phases of co-operative inquiry in the participatory design process of the sewing co-operative

Phase One

The design approach of the sewing co-operative is identified by a design aesthetic which is called Venda fusion explained as western style products made from Venda traditional cloth called nwenda (tshulu trust website:[sn]). Venda fusion products are produced for the tourist market that visit HaMakuya annually and as a consequence of this, there is a need to equip the participants with sufficient skills to produce fashion products. As a result, imparting basic sewing skills was the focus of Phase One in the first year (2012) of training. The challenge of equipping skills for manufacturing products includes using alternative, low-cost fabrics and avoid using nwenda which is expensive to use in the foundational stages of the training. In order to address this challenge, the participants and myself agreed that for the first three months of training, the focus would be on basic skills training in order to develop sufficient sewing capabilities.

At the conclusion of Phase One, the participants achieved the skills that enabled them to manufacture products independently. Each participant manufactured a basic ladies top mock-up with a variety of details in order to acquire different sewing techniques from a single garment. Although the participants manufactured the garment and learnt to use the sewing machine, the training process faced various challenges. Some immediate challenges to the participatory design process include long travel distances and language barriers which result in limited and challenging contact time between the participants and myself. The use of arts-based approaches in the training assists to address some difficulties. For example the participants documented through photography some stages in sewing to use as references in their learning during periods when I was not on the field. The samples sewn in Phase One as well as the developed photographs were used by the participants to enhance their sewing capabilities. Ezio Manzini and Francesca Rizzo (2011:201) in their paper Small projects/large changes: Participatory design as an open participated process express that in the participatory design process, design devices such as mock-ups are used to trigger new actions.

This understanding aligns with how after constructing the basic ladies top mock-up, a consensus was formed between the participants and myself to apply the newly-gained sewing skills to manufacture new product designs and use nwenda for these products.

Phase Two

The products manufactured in Phase Two are under the Venda fusion line. These products include skirts, handbags, aprons, table cloths and runners. Phase Two also incorporates marketing the products to the participants' client base. This is particularly empowering for the participants because besides skills training there is also monetary gains for the co-operative which is used as remuneration for the participants. Although the training interventions were funded by the National Research Foundation (NRF), the high retail price of nwenda continues to be a challenge for the participants and this challenge limits building stock in large quantities. This challenge is addressed by introducing the idea of using fabric offcuts to manufacture products such as pencil cases and keyholders which require less fabric quantities. By making these initiatives within the group, the participants reveal the extensive growth in their creativity and capability to adapt and apply their learning.

Three out of the four participants left the project at the beginning of the second year of the research project in 2013. Two of the three withdrawn members decided to join a local community programme that ensured a regular monthly income whereas income from the co-operative was more irregular as it relied on sales generated. This unfortunate and unexpected occurrence slows and dampens the participatory design process. With just one remaining participant and myself there is a need to re-mobilise the participatory design process.

Phase Three

In order to address the challenge of participant withdrawal and to avoid the design process from reverting back to the beginning stages, the opportunity is advertised for people with limited sewing and business skills. Business skills are important requirements because the hope is that an entrepreneurial candidate would enjoy the unpredictable nature of business and establish solutions and ideas in difficult financial times instead of exiting the project. This recovery plan results in two out of the three new recruits who have limited sewing skills and one of these two members is also a well-known business person in their village. Regardless of some members having limited sewing skills, foundational training commences over a shorter time period than the initial phase. The reason for this is because the remaining member of the first group co-facilitates the foundational training with me. In this way in less than a year of the participatory design process, this member was in a position to train other community members in basic sewing. This incident demonstrates what Manzini and Rizzo (2011:202) call bottom-up social innovation which is "when groups of people who have co-decided what to do and co-designed how to do it." This results in bottom-up social innovation being a result and a main driver of a participatory design process.

The activities following foundational training includes increasing the different Venda fusion products which now also includes pillowcases, cushion covers, beaded jewellery, tray mats with embroidery of Venda phrases, different skirt designs and men's trousers. By mid-year in September, the participants apply the skills that they assimilated in the training processes and to conclude the research study; the group designs a new two-piece outfit that is showcased at a local fashion show. The fashion show is organised by the participants and myself to launch and market the co-operative and products. This

fashion event reveals growth in the participants' organisational skills especially with the use of the logic model as a tool for task management. These tasks are stipulated by the group and facilitated by myself and include producing products, sourcing music, the venue and advertising the event. Formulating these tasks reinforce the understanding that in co-operative inquiry "there is reciprocity so that each person's agency is fundamentally honoured in both the exchange of ideas and in the action" (Reason 1994:6).

Phase Four

In the final reflections of the process the participants made a critical observation of the whole experience. The participants are impressed and feel a sense of pride with their sewing and designing skills. The words of one of the newer participants prove this claim in a closing statement when the participant voices that "with our increased sales I realise that I am very proud of myself, when I started I couldn't do a single thing, not even to use a sewing machine but now I sew pencil cases, I can sew a two-piece, I can sew a bag I am very proud of myself" (Participant A 2013 [Recorded]). The group also express surprise at the experience and another participant's statement concurs this with the statement that "this experience helped a lot because we learnt more than we expected" (Participant B 2013 [Recorded]). This participant continues to articulate the success of the training and utters that "in each experience sometimes you fail, sometimes you pass and this time we have passed" (Participant B 2013 [Recorded]).

In my attempt to assist the group to identify a new proposition for their own co-operative inquiry process at the conclusion of the research study I question them about a five-year goal for the co-operative. A participant expresses that "we will be far in five years we will buy a car for the business" (Participant A 2013 [Recorded]). In my opinion this is a goal that may have various sub-goals before achieving it ultimately. Additionally, setting their future goals illuminates on the idea that the cyclical progression of a co-operative inquiry process is never-ending as the conclusion of a set of cycles presents an opportunity to encounter another set of cycles. The cycles are explored with a new propositional knowing based on the previous experience.

Conclusion

In the process of developing the Zwonaka sewing co-operative I designed and manufactured with the participants by applying the principles and methodology of co-operative inquiry. Although we encountered challenges, the participative and involved nature of co-operative inquiry, empowered the participants to exercise and apply their own knowledge in order to amend some difficulties. The groups' involvement in the participatory design and development process also provided them with the opportunity to transform their being from community members to business women and skilled seamstresses. This case concurs Manzini and Rizzo's (2011:201) notion that in the participatory design process participants are "social actors endowed with creativity, organisational capabilities and entrepreneurship, and therefore capable of figuring out, enhancing and managing new solutions." This understanding presents an awareness that the members of the Zwonaka sewing co-operative can apply their knowledge independently to develop the business further. The expression of the participants' own ideas and plans for the future is testament of their competence to apply their assimilated knowledge independent of myself, their design partner and facilitator.

The experience of utilising co-operative inquiry as a model for sustainable learning has empowered the women to be agents of their own destiny through using design, manufacturing and marketing skills

as tools to improve their own lives and contribute to developing a micro-industry in HaMakuya. The agency of the women coincides with an idea of co-operative inquiry in how within this participative methodological approach the participants are perceived as self-determining (Reason 1994:6). Fundamentally, "to say that persons are self-determining is to say that they are authors of their own actions and one can only do research on persons in the full and proper sense if one addresses them as self-determining which means that what they do and what they experience as part of the research must be to some significant degree determined by them" (Reason 1994:6). In these ways, co-operative inquiry has proven to be a model that has the potential to not only democratise the relationship among the role players of a participatory design process but also to enhance sustainable learning.

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EMPOWERING THE CULTURE OF SOCIAL INNOVATION

Anna Meroni

Politecnico di Milano

Daniela Selloni

Politecnico di Milano

Lorraine Gamman

University of the Arts London

Adam Thorpe

University of the Arts London

Abstract

It can be argued that today, in Europe and world-wide, there is an increasing effort of social actors and cultural operators to organise initiatives in support of social innovation, to find new and sustainable ways of thinking and doing. This paper suggests that designers, today, can play a role in empowering this phenomenon, supporting the culture of sustainable social innovation by catalysing co-creative and participative contexts involving citizens, communities, businesses, third sector organisations and institutions to find solutions for the most pressing societal issues. By presenting and discussing 'design experiments' developed within the international Network DESIS – Design for Social Innovation and Sustainability - and other benchmark cases, this paper considers how effective co-design contexts that help to scale this culture within society are created.

Keywords: *social innovation, design experiments, co-design, scaling up.*

Social Innovation as a Culture of Respect and Responsibility

Driven by diverse combinations of wish and need, new and sustainable ways of thinking and doing are spreading in Europe and world-wide via the activities of social actors and cultural operators. Although gaining recognition, these activities, broadly referable to as social innovations, are far from mainstream. Those cultural operators and advocates engaging in such activities can be seen as 'outliers' (Gladwell 2007) and 'creative communities' (Meroni 2007) whose actions anticipate a new sustainable future and propose viable solutions to many of today's 'wicked' (Rittel & Webber 1973; Buchanan 1992) problems. Problems characterised by novelty, complexity and a lack of clarity as to the problems' 'owner'. Such challenges, including social resilience, elderly population, welfare costs, cities regeneration and public service cost reduction to name but a few, involve multiple stakeholders, often with competing drivers and desirable outcomes. The nature of these challenges in turn necessitates multi-stakeholder collaboration in order to address to them. Thus, how to foster such collaboration in equitable ways is key to meeting society's challenges.

Until now, the grassroots initiatives that respond to these challenges have been mainly considered from a social, economic and environmental standpoint. An equitable, bearable and viable combination of these perspectives has been considered to constitute a sustainable scenario in which future generations might thrive (Gamman & Thorpe, 2012). However, these prior perspectives could and should be complemented by a cultural perspective, in order to understand the meanings and values of such sustainable scenarios so as to foster more opportunities for them to emerge, be reinforced and spread. Perhaps unsurprisingly, it is observed that amongst the values these sustainable ways of living share are the principles of respect and responsibility that are at the basis of social sustainability (Woodcraft et al. 2011).

'Design experiments' to foster social innovation

This is a time of wide reflection, across Europe, around social innovation and its related phenomena. In particular, a number of on-going research projects funded by the European Union¹ are exploring how this kind of innovation arises, grows and spreads. TRANSITION² and BENISI³, explore how it can be "incubated and scaled-up", while TEPSIE⁴ reflects on "the barriers to innovation, as well as the structures and resources that are required to support social innovation at the European level". According to TEPSIE: 1) the use of the term "scaling up" applied to the growth of social innovation can narrow thinking about possible routes and approaches to growth; 2) the discussion would benefit from more clarity concerning the specific nature of the innovation to be spread e.g. is it an idea, a specific intervention, a social practice or an organization; 3) there is a lack of research on the role of intermediaries and umbrella organisations in the spread and growth of social innovations; 4) spreading innovation is a social and highly contingent process (Davies & Simon 2013). Evident from these accounts is the fact that currently most attention is focused on the "(social) enterprise" (very often the "start-up") as the harbinger of social innovations, often at the expense of acknowledging and supporting the other ways social innovation can manifest (collaborative practices and ventures, temporary initiatives, networked action etc), while the term 'scaling' is discussed and articulated per se: according to Westley & Antadze (2013) we can talk about 'scaling out' referring to the "efforts to disseminate social innovation, so that its benefits can be felt by more communities and individuals" while 'scaling up' refers to "efforts to connect the social innovation to opportunities (resources, policies, values) occurring in the broader economic, political, legal or cultural context." (ibidem: 4)

Here we argue that there is a cultural dimension to social innovation, linked to its capacity of creating, and dependency on, new, shared meanings, a "common sense", new ideas of quality of life and a distinctive knowledge within society. We propose that this cultural commonality can be scaled via a set of 'experiments' conducted by cultural intermediaries (associations, universities, civic movements, companies, cultural and art operators) utilising a design approach and specific creative methods and tools.

More precisely, we can report cases in which designers attempt to play a role in empowering the culture of sustainable social innovation by using their capacity to set up co-creative and participative contexts involving citizens, communities, businesses, third sectors organisations and institutions in defining and addressing the most pressing societal issues.

This is a territory where design meets art, civic movements and social responsibility: they are experiments conducted with the aim of engaging wider audiences in collective processes of co-designing more sustainable ways of living. They are public and collaborative actions and

'performances' (Manzini & Staszowski 2013) where the designer acts as 'catalyst' and 'enabler' of grassroots initiatives that can be seen as 'prototypes' for future ways of doing things. Like Thackara (2005) we understand that 'in this new era of collaborative innovation, designers are having to evolve from [solely] being the individual authors of objects or buildings, to being the facilitators of change among large groups of people.' In the examples that follow, designers not only operate as problem solvers, but very often as 'activists' and 'coaches of communities of people' willing to challenge cultural hegemony and explore new ways of doing things. In other words, designers are more and more undertaking initiatives of social engagement with the purpose of activating critical thinking and mobilizing people at the community level. We can call this 'community centred design' (Manzini & Meroni 2014).

Besides the huge number of influential reports that have been published trying to explain "creativity" and "innovation" in the more established sense, today we also have an increasing number of studies that explore the role of designer as 'cultural activist' (Fuad-Luke 2009; Scalin & Taute 2012; Fry 2010). In parallel, a number of websites and initiatives are claiming the power of design as social activator⁵. Adopting the Westley & Antadze terminology, we can argue that these 'design experiments' act mainly to 'scale up' social innovation, as they aim to foster, amongst a broader cohort of local actors, an attitude and aptitude for innovation that enables it to happen more broadly. They do this by prototyping more sustainable ways of living, enabling exposure to, and experience of, new ideas and expectations on life. Despite their varied nature, these experiments share common traits, as they are designed to be:

- engaging and interactive: emotionally attracting people by appealing not only to rational motivations, but also to desire of having an amusing and pleasurable experience;
- visionary and inspiring: stimulating imagination about the future by proposing scenarios and visions conceived as starting points for exercises of co-creation;
- dialogic and talk provoking: foster discussion, listening, and understanding about shared issues. Adopting the Sennett concept of dialogical conversation (Sennett 2012), we can describe them as situations that lead to collaboration rather than confrontation and teach people to think creatively;
- empowering: they enable and build capacities of all the stakeholders that participate in them;
- localised and temporary: they are localised so as to be connected to concrete community issues and are mainly connected to urban hot-spots.

To exemplify these 'experiments' we present a few of them below, characterised by an explicit and pivotal presence of designers and creative talents:

_ BMW Guggenheim Lab (www.bmwguggenheimlab.org)



Figure 1: BMW Guggenheim Lab overview (Photo credits: BMW Guggenheim Lab)

MIOS – Museum in Our Street (www.pantopicon.be/news/431)



Figure 2: MIOS overview (Photo credits: Pantopicon)

Territories in Residency (Territoires en Résidence)



Figure 3: Territories en Résidence overview (Photo credits SDS)

DESIS's experiments: integrating field work in education.

Design for social innovation identifies these activities as a primary field of work. The global network of design schools DESIS (Design for Social Innovation and Sustainability) has been experimenting with a number of initiatives of this kind. The capacity of the network to exchange and compare their experiences and the involvement of students, add a distinctive pedagogic value of significant difference. Students are engaged in several ways, from a lighter commitment as assistant researchers in extended research projects, to a full responsibility as junior designers working in the context of a design course. The common purpose of these design activities is experimenting with:

- the way designers can get effectively engaged with communities through collaboration and participatory design, in order to grow the capacity of people to be innovative and experimental in address to everyday issues;
- the way to provide a socially responsive design education, growing the sensitivity of students toward social needs by practicing design in the field, in close contact with communities of stakeholders.

Here below a selection of design experiments conducted by DESIS Labs of different schools is reported and commented.

The ideas sharing stall (2010-on going): an initiative conducted at the Earth Market, the Slow Food farmers' market in the city of Milan, organised within the framework project "Feeding Milan. Energies for Change" by Slow Food, the Politecnico di Milano-POLIMI –DESIS Lab and the University of Gastronomic Science. At this stall, researchers and students organise and manage co-design sessions aimed at co-creating or testing ideas for new services with potential users (Meroni, Fassi and Simeone 2013, Cantù & Selloni 2013).



Figure 4: Idea Sharing Stall overview (Photo credits: Polimi DESIS Lab)

Creative Citizens project (www.cittadinicreativi.it) (2013): a meeting space for citizens, designers, institutions and local stakeholders and an open lab to co-design and co-produce services for daily life in a neighbourhood. Organised by the Polimi DESIS Lab, it took place in a former farmhouse now in the city center, the Cascina Cuccagna. Creative Citizens had a programme of weekly meetings, to collect and experiment ideas in co-design sessions dedicated to different topics. (Cantù & Selloni 2013; Selloni 2014)



Figure 5: Creative Citizens overview (Photo credits: Polimi DESIS Lab)

Coltivando the convivial garden at Politecnico di Milano, is a collaborative project of Polimi DESIS Lab that merges various design competences. Developed by a team of postgraduate students, supervised by researchers and professors together with the neighbourhood, the garden was born in October 2012 in a 900 square meters area in the Bovisa Campus. Today it is a well productive site, a neighbourhood hot-spot, a daily meeting place for various communities and a location for cultural events and educational activities (Meroni, Fassi and Simeone 2013).



Figure 6: Coltivando overview (Photo credits: Polimi DESIS Lab)

Amplify Creative Communities, organised by the Parsons DESIS – Lab and funded by the Rockefeller Foundation in 2010-2013 in NYC neighbourhoods, it was a set of design driven initiatives aimed at finding often-hidden examples of people who have organized their own resources for more sustainable city living. The distinctive feature of the project was the organisation of a series of co-

design exhibitions/events in the city neighbourhoods aimed at learning how to create successful alternatives to the standard services, help those initiatives become easier; showing others how they could do it for themselves.



Figure 7: Amplify overview (Photo credits: Parsons DESIS Lab)

_COR - Create, Occupy, Recover (Cria, Ocupa, Recupera), a project developed under the program Action For Age, promoted by Experimenta Design (2011). It was aimed at creating intergenerational relations within the neighbourhood of Beira-Mar of Aveiro, Portugal, through the occupation and rehabilitation of abandoned houses. It was a social incubator to tackle problematic issues in the historic city: it guided a series of co-design sessions in order to find ideas and decide how to use and transform these spaces.



Figure 8: COR overview (Photo credits: ID+ DESIS Lab)

_Welcome to Saint-Gilles (2011-2012) was a research project developed by 7 schools of DESIS network in the neighbourhood of Saint-Gilles, Liege. The students were involved to co-design with the local community in order to empower it to creating new services and new initiatives. The project resulted in micro projects aimed at creating new rituals, interventions to the public and private space, new ways for making use of empty buildings, small installations provoking the dialogue on what's private and what's public.



Figure 9: Welcome to Saint-Gilles overview (Photo credits: MAD DESIS Lab)

_ **Green Camden (2012)**: was a practice based research project that engaged design students and research staff from Central Saint Martins and people who live and work within London Borough of Camden in the design of new ways to make reduction of carbon emissions easier and more effective through collaborative action. The programme aimed to help local people to: reduce their carbon emissions, adapt to a changing climate, reduce, reuse and recycle perhaps linked to collaborative/shared assets and to improve air quality. Students and local people co-designed product service systems that could facilitate and promote sustainable behaviours. It delivered a series of co-creation workshops, several service innovations and a public exhibition.

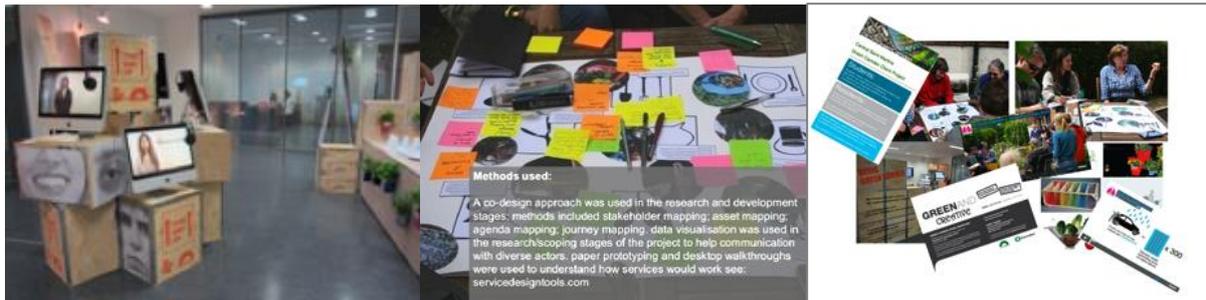


Figure 10: Green Camden overview (Photo credits: UAL DESIS Lab)

‘Performative workshops’: elements of an approach

Building on these experiences and more, a reflection process is ongoing within the DESIS network about how to make these design experiments more effective and to replicate them (to scale them ‘up’ and ‘out’). They present a common format that can be described according to 3 elements;

Firstly, the general “tone” of the initiative, that’s to say the attitude toward the participants and their emotional engagement. Design experiments are co-design workshops with a performative character, that is a visually and expressively rich way to unfold, with the purpose to make participants emotionally familiar with the social behaviour of collaborating in creative ways to address social challenges. We can refer to them ‘performative workshops’ as within the workshop activities participants perform new ways of thinking and doing together. They are open, participatory, public, action oriented and normally staged in public places so as to engage people that may not otherwise come into contact with such activities. They involve design students in an integration with researchers and, of course, a broad variety of local stakeholders

Secondly, the structure of the activities. Performative workshops are ‘hands-on’ activities and designed so as to be experienced by the participants and by the broader public as ‘performances’ of collaborative activity in address to local societal challenges. They are structured around a basic collaborative design process, articulating:

- _ the co-discovery of issues of local concern,
- _ the co-definition of issues to be addressed,
- _ the co-development of proposals to address them, and
- _ the co-delivery of visual and material outputs.

Thirdly, the used methods and tools. The performative workshops adopt and adapt the well-established set of tools that comes from service design and participatory design: generative techniques, tools for ethnographic investigation, visual mapping, storytelling, prototyping, enacting,

scenario envisioning, shooting, role playing etc. As a peculiar feature, these tools and methods are integrated with a set design sensitivity, that's to say a particular care for the 'mise en scène' and the 'choreography' of the activities, to make them more attractive, and emotionally engaging.

Tapping into the experience developed so far within the DESIS network, the performative workshops are now being conceptualised in order to become more transferrable experiences as pedagogical and socially influential tools. Besides the issues regarding structure and organisation, an assessment of their effectiveness, beyond their indubitably apparent success, is in fact needed.

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Endnotes

¹ Under the 7th Framework Programme

² "Transnational Network for Social Innovation Incubation" <http://transitionproject.eu>

³ "Building a European Network of Incubators for Social Innovation" <http://www.benisi.eu>

⁴ "The Theoretical, Empirical and Policy Foundations for Building Social Innovation in Europe" <http://www.tepsie.eu>

⁵ Design Activism - <http://www.designactivism.org>; De Activist - <http://thedesignactivist.com>; Design Activism: <http://designactivism.net>; Design Activism, Projects in Public Architecture: <http://www.designingactivism.com>

FUCKUTECTURE; A POIGNANT REVIEW ON ELITIST SOUTH AFRICAN ARCHITECTURE

Marina Meyer

Greenside Design Center

Jason Wiggin

Greenside Design Center

Abstract

It is important for us as designers to critically evaluate the architecture industry to establish whether or not the current top five architectural firms are designing with the other 90% in mind. We understand this other 90% to be mutually beneficial design that caters to the local context, community development and sustainable building practices. There is an increasing global trend to commission starchitects¹ to design abstract inappropriate iconic buildings. The paper will unpack the characteristics of what makes a starchitecture firm and the '4F formula' that guarantees success in bidding for mega government and private project tenders. Using the case study of Sandton and Alexandra Township this paper will demonstrate that money and connections count for more than design and mutually beneficial architecture. Whilst starchitecture addresses fame, fortune and form, pleasing both the architect and the investor, fuckutecture addresses social responsibility, dealing with a community at hand and the establishment of a mutually beneficial architecture.

Keywords: *Starchitect; Starchitecture; Socially Responsible; Facadism; Big Five; Icon*

There is an increasing global trend to commission starchitects (famous architects, otherwise known as starchitects) to design iconic buildings. Radical forms have become closely associated with architect's names thereby imparting a pseudo-celebrity status. When critically reviewing these works that dominate skylines and popular media, it is evident that there is little consideration for the fundamentals of sustainable design that is mutually beneficial design and considers local context, community and purposeful space. This sets a trend that in order to become a successful architect today, one should spend only 10% on design fundamentals and 90% on marketing radical, high tech forms that dominate the skyline. For the purpose of this paper, key ingredients to becoming a starchitect are defined as the "4F's" of architecture, *Firm, Form, Fortune and Fame*. These will be addressed within a South African context.

Form - Creativity can be defined as the ability to transcend traditional ideas, rules, patterns, relationships, and to create meaningful new ideas, forms, methods and interpretations. The starchitect's forms are creative but are not necessarily meaningful or sustainable mutually beneficial designs. Starchitecture has encouraged facadism², seductive forms that have become increasingly superficial. The aesthetic mask of a building takes centre stage above the meaningful aspects such as functionality and 'Contemporary architecture, led by the popular cadre of so-called South African starchitects (otherwise known as the Big Five), has been immersed in more esoteric issues of form,

site, and layers of meaning so abstract as to be invisible to the average passer-by” (Stephens 2009). Therefore starchitecture is the development of a radical form making use of innovative tectonics with few other considerations.

Perret (2009) suggests post the inauguration of the Guggenheim in Bilbao, Spain, a paradigm known as the “Guggenheim effect” has become a commonplace addition both internationally and locally within the urban fabric, “ it is the name for the claim that a building can virtually do anything, with no substantiated networks whatsoever, on a scale unmatched by previous buildings”. The façade becomes the main expression, the interior banal and the overall message unclear. Building forms are sculpted carefully and dramatically like clay, but do not have a social agenda; they do not query and address what the building should provide; what style it should be; and how it should cater for and benefit the surrounding area and community (Jencks 2006). South Africa, more specifically Sandton has seen an increase in the abstract expressions of these buildings, which aligns with the Guggenheim effect. Civic and commercial buildings are seen as objet d’art by developers and city municipalities as a means of heightening a city brand, making as well as increasing commercial revenue of the area. In suburbs such as Sandton we are faced with vast contorted forms that align the main roads all vying for the public’s attention. These South African icons seem to all be competing to become the country’s most elite and significant form on the skyline. According to Jencks (2006 :12)

The self-important building characterizes our time, partly because the size of commissions becomes ever larger under late-capitalism and partly because architects and their commercial products must compete for attention.

In the local South African context the public at large often misunderstand the venture of facadism. Albeit that they refresh the skyline, these unique objects do not often address the community that surrounds them. With less and less time to design for complex and rapidly developing projects, standard architectural practice has solidified a consumer culture of the copy. The ‘culture of the copy’ has reduced architectural objects to consumable commodities whose perceived added value has dramatically inflated the price and scale of architectural projects, yet, at the same time diminished their significance and realness (Klingmann 2013: 6). Often these iconic buildings are raised above street level, with high boundary walls. The icons do not lead to the generation of a cultural precinct where a community can gather and interact with the building at hand, leading to a one sided rigid relationship between building and community. However there is a place for these iconic buildings if they play a key role in actually rearticulating and reconfiguring the local identity in a complex and mutually beneficial way, relevant to the site specificity community and context.

Fame - The foundation of celebrity is closely linked to the media. The word ‘fame’ implies media, paparazzi, fashion and fortune. Celebrity is defined by the frequency and status given to the ‘celebrity’ by the press and media critics. The same applies to architecture, the celebrity strength of an architect is assessed by the attention they are able to generate from their work and inevitably the fame that follows. Once an architect or architectural practice has received a significant amount of visual exposure the media hype inevitably follows. As pointed out by Nueno (2009)

“Starchitects occupy the privileged position within the group of architects, similarly to other industries such as movie production, fashion and arts. They are the stars of architecture similarly to Tom Cruise and Steven Spielberg being the stars of the movie industry”

It is difficult to conceive of architectural success without visualising a powerful iconic image. As architecture is so visual it feeds into today's dominant visual culture of mass media and consumerism. An architect's product is an advertisement billboard for both themselves (firm) as well as the respective investor(s). The visual nature of the icon dominates aspects such as function, usability and comfortable spaces which become secondary and somewhat neglected.

Professor Kelbaugh of the University of Michigan states that starchitecture "is all about media, flash, avant-garde shock, and sex appeal" much like any fashion brand or celebrity. This inevitably leads to an elitist sentiment that the iconic building simply becomes a matter of fashion, publicity and self-promotion by the architect. This is a dilemma faced by architects today; for an architect to be deemed successful today they need to become part of the broader community culture and not just remain in their tight knit professional circles. It is apparent that once an architect has moved beyond the professional publications and into the mainstream media they have 'hit the big time'. It is this recognition by non-architects that catapults the architect into super stardom and at this point that architects can give flight to their fantasies and not necessarily be socially responsible architects.

In the late 1990's starchitects began associating themselves with famous brands to further build on their celebrity status. "The value of these architects as a commodity has created opportunities for them to extend their influence beyond building design, and to establish themselves as global brands". (Trahan [s.a]) It is no longer about designing a great building but rather about managing a brand and celebrity status.

What does this imply? Do architects who want to become successful and inevitably famous need to sell themselves as mainstream brands that spend more time concerned with fashion or the facade of the 'object' to achieve celebrity success. Are they destined to remain designers who never delve into the existing context, or attempt to discover the local people and try serving these communities ultimately benefiting humanity? With all their status and 'power' it is imperative that these celebrity architects lead by example and no longer follow the flashes of the paparazzi.

Starchitects who yield so much power over the media should be held more responsible. These starchitects need to start become reporters and activists for the local community they are working within rather than visual brands for their own egos with little benefit to the immediate community.

Firm - It is becoming an increasing trend for large commercial clients such as banks, famous fashion houses, large corporations, technology brands and even major City Governments to employ these starchitects because of their fame and perceived power. It is only natural that rich and powerful companies and brands thrive on associating with the elite and the famous. Starchitects are another way of enhancing their brands. The large objectified building forms and the amount of hype that follows starchitects have meant that they have become the most popular and celebrated to contract and as a result now dominate the skylines of commercial hubs, leading new trends in superficial regionalism.

This is evident in the development of key leading firms locally and internationally who are continuously contracted to implement large-scale, multi-million rand projects. It is clear that the more commercial the architect, the more commercial the project and the greater reinforcement of the brand and vice versa. Therefore it is only mutually beneficial relationship for the client, brand and the architect not the

local context or community. These architects of choice form an exclusive club made up of a few select firms, forming a closed network or 'old boys club' of the preferred firms who dominate the bidding process. This leaves little room for the smaller architecture firms who may pay more attention to aspects such as sustainability, site specific context, the social aspects and functionality of a building rather than an 'iconic' form that will inevitably lead to fame and fortune, substituting fame and notoriety for traditional values and a level playing ground (Jencks 2006: 12).

Just as safari adventurers and hunters seek out the Big Five³ so has this paper. Although no firms are mentioned it is clear that there are certain characteristics that seem to define the Big Five architecture firms in South Africa. The first being a starchitect or celebrity CEO/ Director who is the face of the firm. This head figure may have a partner who focuses on more of the office and detail aspects of the practice while the celebrity CEO is the mover and shaker of the firm, continuously networking with big players in the industry. The second trend is that the heads of these Big Five firms have a significant amount of employees (minions) who carry out their orders and take care of the finer details to get the project complete. They usually number to well over 80 employees. The third important aspect is that the firm has close ties to key players in the construction industry, either political or corporate partnerships with the large construction companies of South Africa. The fourth aspect is that the firm has usually been extensively published and been furnished with many architectural awards. Their peers recognise them as 'big' and reinforce this whilst rewarding them with the highest and most distinguished achievements within the industry. The fifth of the Big Five characteristics is that the government and significant Architectural organisations accredit these firms, backing them every step of the process from tender to completion.

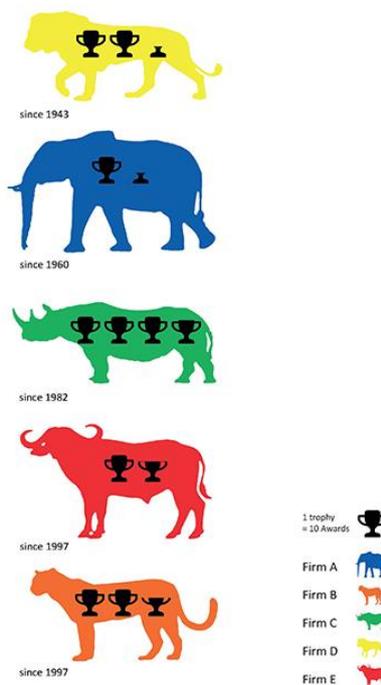


Figure 1: An infographic depicting the amount of awards that the 'Big Five' firms have accumulated since their inception. One trophy is equivalent to ten trophies. (Authors 2014)

The sixth characteristic is that these Big Five firms have offices in major cities. This helps establish them as major contenders in the industry all over South Africa. They most likely also have a satellite office in another country with intent to establish themselves internationally.

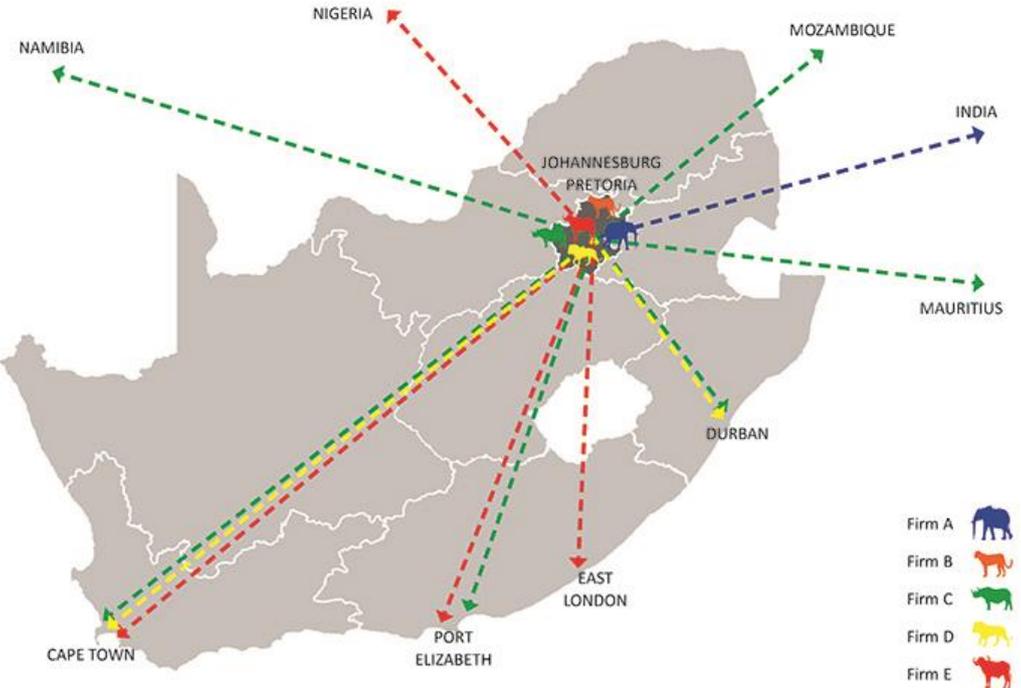


Figure 2: A map showing the spread of the 'Big Five' in South Africa. (Authors 2014)

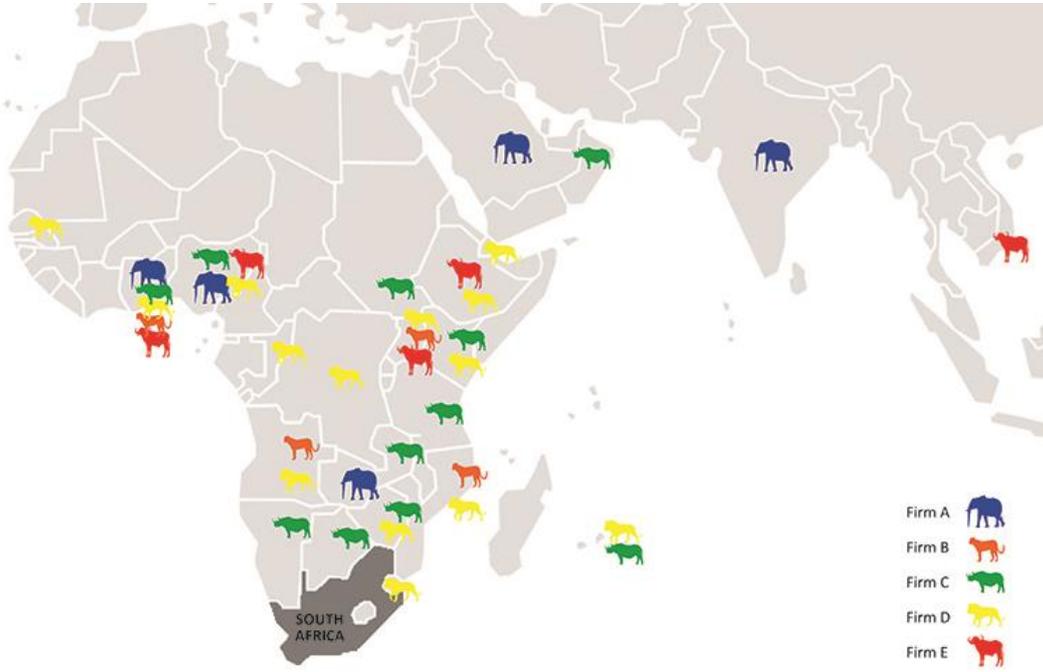


Figure 3: A map showing the spread of the Big Five Internationally. (Authors 2014)

For any architect looking to become one of the Big Five it is imperative that these six items are adhered to in order to achieve their eventual celebrity status.

Fortune – As cited by McNeil (2009), Sudjic states:

“There can never have been a moment when quite so much high-visibility architecture has been designed by so few people. Sometimes it seems as if there are just thirty architects in the world.”

Up until the mid-twentieth century the main sponsors and drivers behind iconic architecture were State or Religious Bodies. Today capitalist globalization has meant that the drivers have become ‘members of the four fractions of the transactional capitalist class, made up of corporates, states, professionals and consumerist bodies. Global recessions, coupled with capitalist globalization and limited job opportunities which has led to an increasing competitive nature of the architectural profession has meant that there is an growing need for firms to innovate and to successfully partner with strong contenders in the construction industry and political sector. As Seligmann (2008: 36) quotes Jencks reinforcing this notion by stating that “if the city can get the right architect at the right creative moment in his or her career, and take the economic and cultural risk, it can make double the initial investment”.

Production and marketing of what has been increasingly identified as iconic architecture is the main route to achieving profits – financial, political, and cultural – deemed necessary for the success of urban megaprojects all over the world. The Big Five Firms of South Africa continue to dominate through commissions from government and private corporations. These megaprojects tend to be ‘creative’ indulgences that only the rich can afford. This seems criminal for a developing country such as South Africa with a large impoverished population. The iconic buildings seem to win over the hearts and minds of the public and become a powerful tool for transmitting the consumerist values and practices that sustain the elitist capitalist globalization that our city centres are so fond of today, Jencks (2006: 4) states “developers and mayors could see the economic logic of sculptural gesture, with its many enigmatic signifiers, and the same method was applied to any and every building type” It would seem that seductive capitalism and flashy marketing has become more important in design than mutually beneficial architecture.

Our current economic and social situation calls for national laws and adequate regulation of the profession to ensure that there is a fair supply of quality architectural services. South Africa has not yet reached the point of fair and equitable practice within the building industry as in 2013 fifteen leading construction companies were found guilty of collusion by the Competition Commission and requested to pay R1.46 billion to various Municipalities for works carried out for the 2010 World Cup (Bhuckory 2013). With the reputation of the architectural profession hanging in the wings and the compulsive need for both the public and private sector to keep employing the Big Five for their flashy forms it does not look like we will move away from this seductive capitalist way of designing our future cities.

South Africa is facing a tumultuous relationship between architecture and surrounding communities. A prime example of this is the tale of two suburbs: Sandton and Alexandra separated by a highway. The Sandton CBD as socially irresponsible and Alexandra Township as socially responsible. Increasingly the Sandton area reflects many icons of the Big Five. In fact almost 80% of all buildings within the Sandton CBD have been carried out by the Big Five.

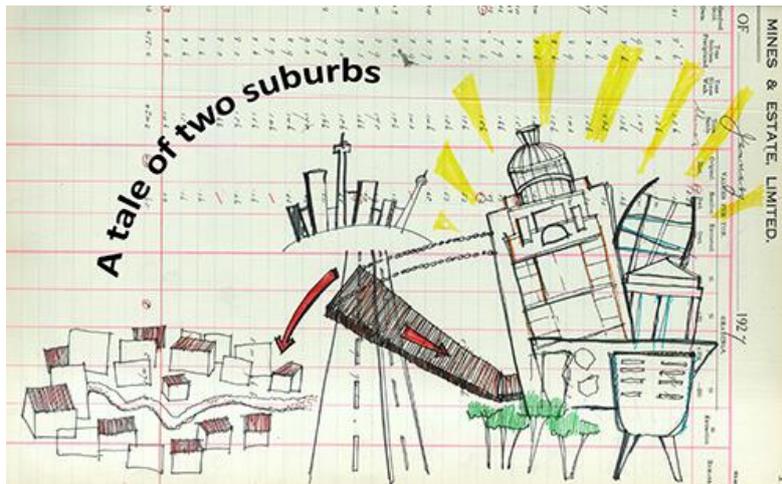


Figure 4: An illustration of Sandton versus Alexandra depicting the proposed bridge link. However it is a draw bridge and controlled by Sandton much like all development in the area.

In contrast Alexandra is an old township with a significant place in South Africa's history. Its long-standing poverty was exacerbated by the violence of the political struggle that led to a democratic South Africa, and by a continuing influx of informal settlers (Official Website of the City of Johannesburg...). None of the Big Five buildings are present in this area.

The Sandton CBD is promptly known as Africa's richest square mile due to the exclusive iconic developments within the centre, (Murray 2011), and in recent years it has become the hub of commerce in South Africa. Major corporations have moved from the city centre to a more "park-like environment", which is quickly being absorbed by the commercial ventures of South African architects.

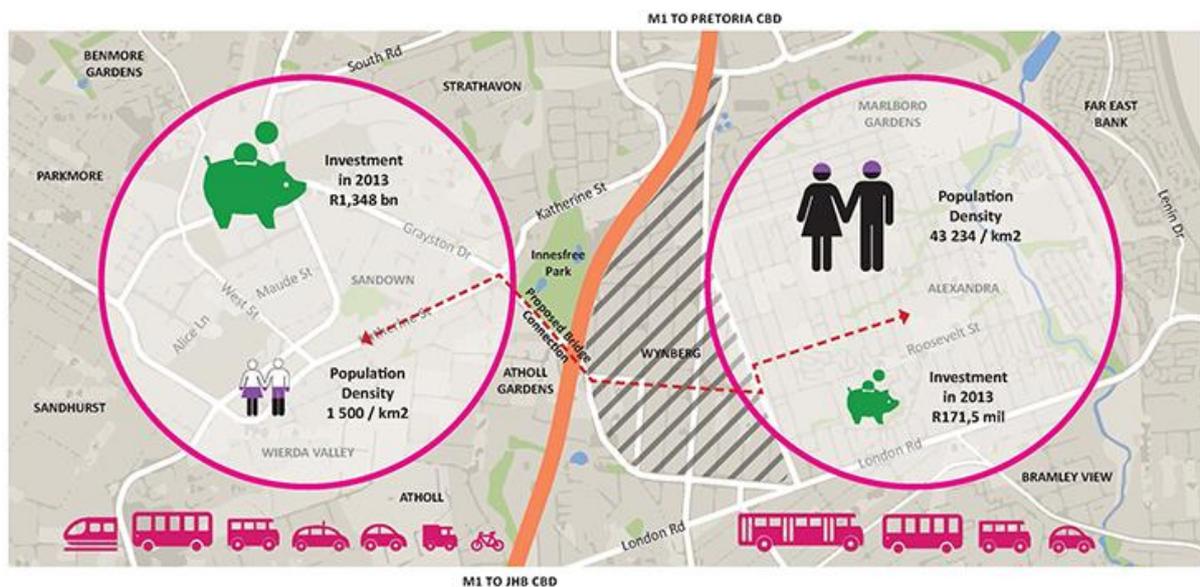


Figure 5: A map depicting the huge discrepancies of available transport, population make up and density as well as economic investment for the areas (Authors 2014)

The infographic map above depicts the huge discrepancies of available transport, population make up and density as well as economic investment for the areas (Authors 2014). This architecture however, fails to engage and promote socially responsible architecture within this multi-million Rand square

mile, the Big Five are easy to spot along the rapidly growing skyline of Sandton, the parks and avenues dwindling in the race for the next brand architecture or exercise in the 4F's.

These buildings lack significance and are less real for it, they are self-important, relying on commissions due to the Big Five architects competing for fame and attention (Jencks 2006: 3). Alexandra, where the architecture has developed from political history and necessity, is beginning to promote and showcase the ideals of the Fuckutect through various architectural initiatives. Such as smaller South African practices are challenging the Big Five and addressing the needs of a sustainable socially responsible architecture. This is an architecture that is not reliant on the flamboyance of facadism or sky-high budgets, but rather reconciling user demand with functionality and aesthetics, putting emphasis on the strengthening of the local context and community at hand.

Given this dire situation South African architects have little option but to develop a rebellious liaison within the various facets. If through the achievement of these 4F's an architect earns their starchitect stripes then the Fuckutect needs to abandon this formula. Therefore if starchitecture is the suicide of culture and ethics, designing for the 10% of society rather than the 90% that are in need, then South African Fuckutects have to work quickly to make a mark and cause a socially responsible stir. Dealing with challenges and controversies and emerging from the growing aftermath of starchitecture is the first step. The war of starchitecture will not be won, but it is a paradigm to be contested within the South African architectural climate. Through the questioning of the 4F's, smaller firms will be able to distinguish themselves against the Big Five and promote sustainable responsible architecture. Fuckutects need to challenge social, economic and cultural issues "It's a time to be creative. It's a time to focus on local technologies and methods, to build local participation and pride. It's a time to focus on the end user rather the investor and create sustainable environments that are enduring and create lasting impact" (Klingmann 2013: 12).

It is time for South African architects to relinquish their pseudo-celebrity status, to revisit principles learned as a student. Principles that align with being a Fuckutect. A stand should and must be taken against investors who only want to reap monetary benefit and against construction companies involved in collusion.

Between Africa's richest square mile and a presidential home worth over two hundred million Rand, the Fuckutect should demand to be heard, even if they cannot sway the entire South African architectural climate. This is not to say that there is no place for iconic architecture or the South African starchitect, but the extensive bridge between irresponsible starchitecture and social responsibility needs to be crossed. The imaginations and skills of South African architects, which know no bounds and need to be exercised should focus less on the 4F's and embrace community and creating a sought after sense of place. The focus on Sandton and Alexandra Township has illustrated the plight of a community in need against the Big Five. Mutually beneficial architecture must take its rightful place, Fuckutecture is demand for a cultural power which should be wielded without shame, regret or apology. Fuckutecture addresses social responsibility, dealing with a community at hand and the establishment of cultural precincts. It may be less seductive than the starchitect's icon, but its longevity is held and controlled by a community, providing a sustainable value for a long period of time.

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Endnotes

¹ A starchitect is an architect who becomes widely known among the general public as well as in the architecture community. The term Starchitect is a combination between the words star and architect and is used throughout the world to describe a famous architect.

² Façadism refers to an architectural and construction practice where the facade of a building was designed or constructed separately to the rest of a building. More often it refers to the practice where only the facade of a building is preserved with new buildings erected behind or around it.

³ In Africa, the term big five was coined by big-game hunters and refers to the five most difficult animals in Africa to hunt on foot. The big five are among the most dangerous, yet most popular species for big game hunters to hunt.

THE PROCESS OF SOCIAL INNOVATION: A CASE STUDY OF QUALITY BASKETS

Shorn Molokwane

Botswana Institute for Technology Research and Innovation

Richie Moalosi

University of Botswana

Abstract

There are many forms of social innovation interpreted by the world's variegated societies. The social needs and challenges the society meets may inspire an individual or groups with ideas to improve their own and the community's situation. One of the most successful modes of social innovation is the growing linkages of knowledge created between networked groups because there are sustainable patterns of knowledge and skill sharing, building creative industries, creating employment and dignified sustainable livelihoods. A case study was conducted at Quality Baskets group located at Maun and surrounding villages in the Northern part of Botswana. The case study highlights a social innovation process initiated by one social innovator and propagated to other hundreds of people in the neighbouring rural villages. The cooperation of the village basket weavers resulted in the formation of a creative industrial network that shared knowledge and skills, as well as increased economies of scale, plus promoting a sustainable lifestyle of resource utilisation. The case study also shows a clear conservation and sharing of cultural heritage and indigenous knowledge systems. However, there are recognisable possible areas for design and management interventions in areas such as branding, product value addition and marketing which can assist the network to grow its business. This paper outlines the social innovation strides as exemplified by the case study, and suggests how design thinking may intervene and also learn from the grassroots innovative approaches.

Keywords: *basketry, design, social innovation, sustainable livelihoods, Botswana.*

Introduction

I have an almost complete disregard of precedent, and a faith in the possibility of something better. It irritates me to be told how things have always been done. I defy the tyranny of precedent. I go for anything new that might improve the past (Clara Barton, 1821-1912).

Each society has ways people tackle social problems in their own communities. Many social innovations have moved from the margins to the mainstream. Mulgan (2006) cited Arthur Schopenhauer saying much of what is considered mainstream today passed through great hostility from interest groups. Every truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident. Social innovation activities require a passage of time before the true impact is evident (Martin & Osberg, 2007).

Social innovation process

The process of social innovation remains understudied and has received little attention except vague generalisations (Mulgan, 2006). The concept represents a potentially important, but under investigated aspect of creativity (Mumford, 2002). Comparatively, the process of business innovation gets great attention from academic research because it receives a lot of funding and it is generally motivated by profit maximisation. The process of social innovation is made up of six stages that move ideas from inception to fully-fledged impact (Murray et al., 2010; Mulgan, 2006; Mulgan et al., 2007). The stages do not necessarily follow a sequential process and there are feedback loops between them. The stages are as follows (Figure 1):

1. Prompts, inspirations and diagnosis – the stage is concerned with factors that prompts the need for innovation and the inspiration which spark it.
2. Proposals and ideas – this is the concept generation stage where creativity methods facilitates innovative solutions.
3. Prototyping and pilots – This is where concepts are tested and refined.
4. Sustaining – When concepts become the everyday standard practice, it is important to start identifying income streams to ensure the long-term sustainability of the innovation.
5. Scaling and diffusion – Strategies should be put in place that will grow and spread the innovation.
6. Systemic change – The aim is to bring about systemic change, and new ways of thinking and doing things in the society.



Figure 1: Social innovation process (Murray et al., 2012)

Characteristics of social innovators

Social innovation is driven by a very small number of heroic, energetic, inspired and/or impatient individuals. These individuals are proactive and they do not wait for the government or someone else to solve their or the society's problems. The stories of these individuals are inspiring, energising and impressive. They just show how much persistent, dedicated people can achieve against the odds, and they serve as reminders of courage that always accompanies radical social change. Martin & Osberg (2007) argue that these extraordinary people come up with brilliant ideas and against all the odds succeed at creating new products and services that dramatically improve people's lives. Innovators have an exceptional ability to see and seize upon new opportunities, the commitment and drive required to pursue them, and an unflinching willingness to bear the inherent risks (Ibid). Social change depends on many people are persuaded to abandon their old habits (Mulgan, 2006).

Martin & Osberg (2007) underscore that social innovators view challenges as an opportunity to create something new, while so many others see it as an inconvenience to be tolerated, and this stems from the unique set of personal characteristics the innovator brings to the situation – inspiration, creativity, direct action, courage, and fortitude. Even though, social innovators possess these characteristics, they are likely to make little impact in the society if they are not networked to each other to form communities of practice. The world changes as networks of relationships among people who discover they share a common cause and vision of what is possible (Wheatley & Frieze, 2012). This type of network forms what Wheatley & Frieze (2012) term emergent phenomena.

Wheatley and Frieze (2012) further underscore that the Lifecycle of emergence involves three stages that is, the formation of networks, communities of practice and systems of influence.

Stage 1: *Networks* (discovering shared meaning and purpose) – Networks assist to link together people with common interests or engaged in similar work. People live in a time where coalitions, alliances and networks are forming as a means to create societal change. Networks are based on self interest and people join them for their own personal benefit.

Stage 2: *Communities of practice* (developing new practices together) – people who share common interests realise that there is some benefit in being in a relationship. They share their experiences and knowledge and support one another in the community. This creates new knowledge for the field of practice. They share their innovations, knowledge and resources with the wider audience to advance their field.

Stage 3: *Systems of influence* (new practices become the norm) – This is the sudden emergence of a system that has real power and influence. What were marginally practices becomes the mainstream and accepted standard. The pioneers become the leaders in the field. Policy as well as funding start to embrace their perspective.

Research method

A case study was conducted at Quality Baskets and its network based in the north-western part of Botswana. The network comprises of some 310 people (270 women and 40 men) who weave baskets from their home villages, and produce woodcraft products. A case study approach was found suitable for the study because it is an empirical inquiry that investigates a phenomenon within its real-life context (Creswell, 2009). Case studies also allow the flexibility of combining data collection methods such as archives, interviews, questionnaires, and observations (Eisenhardt, 1989). In this case, the study relied on qualitative evidence from interviews and observations. The data was analysed using the within-case analysis, which involves detailed case study descriptions for each site. From the within-case analysis, overall impressions, themes, and concepts emerged from the data.

Quality Baskets case study

The enterprise was started by a humble and dedicated self-made creative woman entrepreneur, culturist, educator, and social innovator. She learnt the skills and techniques of basket weaving at the age of 8. She has exhibited her baskets at the various exhibitions both local and international, for example, in Atlanta during the 1996 Olympic Games and has won many prizes. Her journey in this business started off when a foreign trader who was buying and selling baskets in Botswana discontinued the business. She saw an opportunity to take up the business and build on the growing market.

In 1986, she was assisted financially by Botswana Christian Council to establish a basket wing within the organisation. She started teaching other women basket weaving skills, and the work of the cooperative grew impressively. The cooperative movement had been introduced in Botswana in the late 1960s as a social innovation of clustering business activities for higher volumes of production and group managed gains. The ideal of the cooperative was that each worker would work at their own pace and skill level, making products for sale, with the proceeds being equally shared amongst them. This model was not successful for various reasons, most notably the unfairness of equitable sharing of proceeds from inequitable inputs from individual members. The social innovator then left and started on her own business because she viewed this an exploitative working arrangement.

She realised that the local basket weavers were just street hawkers without any bigger plan or vision. She started by working with the local people in the surrounding villages of Shorobe, Sankoyo, Mababe, Khwai, Etsha 6, Gumare, Khakhwe, Godi, Shakawe, Bogaa etc. selling to them the idea of an organised basket weaving business. She commenced by building a selling shelter for the Shorobe village people where tourists could have a one stop centre to see and buy their products.

She set up her work and started operating from her one-roomed straw house. She single-handedly made all the processes of collecting the raw materials, treating them, weaving, and travelling to sell. As her business grew, she realised the need to employ other people and also build bigger space to operate from, which she did. She reflected on the plight and hardships of the people of her home village and started employing them because it was based on trust. As the business developed other neighbouring villages were included and this was facilitated by family or friendship ties.

Basket weaving local network

The social innovator started training her two employees in basket weaving. As these employees started to acquire high levels of proficiency, she noticed that she also required high levels of commitment and efficacies from them. She motivated them into a sense of ownership of the business and all its activities and processes. She decided to form a business group of partners in basket weaving, giving birth to the company Quality Baskets.

Quality Baskets embarked on a programme of sharing, transferring and disseminating of skills and knowledge in basketry, creating a self-sustaining and growing creative school amongst and by local people in several rural villages. Being illiterate and not having heard of pyramid business or pay-it-forward schemes, she started a pyramid like training scheme in basket weaving, in which she trains a group of people, who would subsequently go on to train their own groups in their villages. This created a myriad of hundreds of people in these villages passing on creative skills and knowledge on to each other and their children (Figure 2). Mulgan, Tucker, Ali and Sanders (2007) argue that this kind of network leaves behind compelling new social relationships between previously separate individuals and groups which matter greatly to the people involved. This contributes to the diffusion and embedding of the innovation, and fuel a cumulative dynamic whereby each innovation opens up the possibility of further innovations.

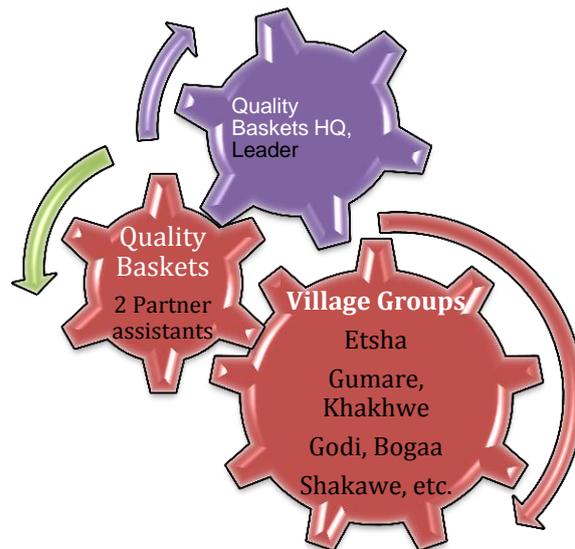


Figure 2 Quality Basket network

The result of this venture is that communities in these villages have created a knowledge-based culture and information repository, empowerment, employment and a dignified livelihood. The possessed skills and knowledge have enabled them to achieve economic independence, self esteem, a sense of belonging and most other positive effects associated with liberation from poverty. One of the most important results of these training activities is the dissemination and preservation of cultural knowledge and values, as young people are also involved. Besides training other workers, Quality Baskets offers a basic one-day overview training in basketry during which any visitor can receive some basic hands-on training, after which they could make a basket to take home, of which to date some 2000 locals and tourists have undergone this training.

The partners in the Quality Baskets network comprise of some 310 people (270 women and 40 men) who produce woodcraft work, each making their own baskets from their home villages, selling to the company, and the company marketing and selling on their behalf, mostly to the tourist market, in Botswana and around the world (Figure 1). Quality Baskets involves people in poverty and marginalised groups, such as people living with HIV/AIDS, single mothers, out of school youths, and unemployed men.

The baskets weaving trade has evolved over the years from the plain utilitarian aspect of a container or storage object mainly used for dry food stuff such as grain, to a highly decorative object of art with variegated patterns and colours. Currently, baskets are adorning walls and rooms in tourist places and modern dwellings. This depicts the changing lifestyles of Batswana (people of Botswana) in general in the way they use everyday objects, change in affluence, and global appetite for cultural objects with meaning. Some of the sample baskets made by this network are shown in Table 1.

Knees of tortoise	Forehead of the zebra	Running ostrich
		
		
		

Table 1 sample baskets

There are a lot of cultural and traditional connotations built into the baskets and the art of basket making. Typically, most basket weavers come from remote rural villages, where they learn the craft over many years, usually from their parents or elderly crafts people. The people in these villages have an akin relation to nature, and their lifestyles are guided by myths, beliefs and norms rooted in oral traditions. Through their basketry, the village people are reviving Botswana's culture and ensuring its continuity. The baskets are woven with story lines that reflect the oral tradition of storytelling, myths and beliefs, as well as the people's understanding and interpretation of nature.

The patterns generated interpret shapes and forms found on or made mostly of animals, as well as other creations made by the people themselves. Examples such as the ribs of a giraffe, knees of a tortoise, running ostrich, the flight of a swallow, forehead of a zebra, the urine trail of a bull, make some interesting and innovative geometry. Figure 3 shows some standard geometric patterns for some of the basket interpretations.

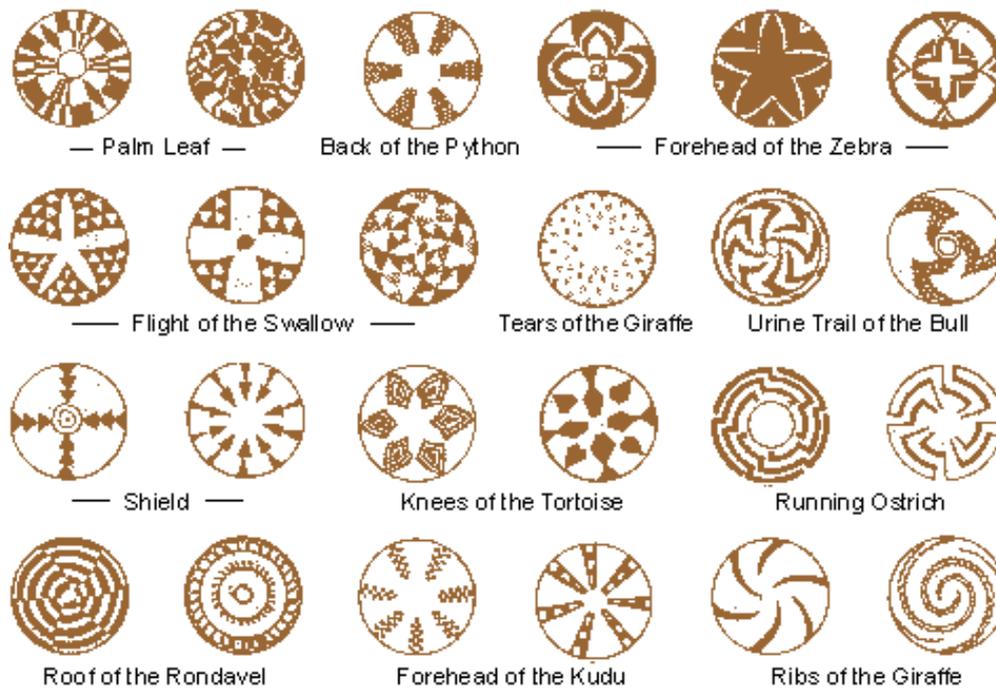


Figure 3 Typical basketry geometry patterns (BotswanaCraft Marketing, 2014)

Sustainability and basketry

One of the most important issues in contemporary life is sustainable local development: of resources, ideas, and other aspects of life. The Quality Baskets and its network are involved in teaching children and other people indigenous cultural values and environmental sustainability issues. Most of the indigenous and rural communities are much better champions of sustainability issues than most urban elite. The Bambukushu tribe, which comprise of the most people in the Quality Baskets network, has an akin relationship with nature and its resources. All their raw materials are 100% natural, mostly plants harvested from the wild. They harvest the palm trees in such a way that it easily grows back. The group has since embarked on a programme to farm their own raw materials, palm trees and other colouring source plants such as aloe vera, to supplement the natural resources. A lot of the villages such as Shorobe, Etsha 6 and Gumare have already established their own palm growing farms, and this is due to the social innovator's efforts. In Maun, plans are being made by the land allocation authority to grant the group a farm land for this initiative. They have already started to plant these trees on a small scale. The Quality Baskets network also recycles other materials such as plastics to make home products like plate mats.

Design intervention

Some of the challenges Quality Baskets network face involve their distant location to modern information technology facilities. Today business is mainly transacted over the internet. This puts the business at a disadvantage because their products cannot easily be accessible to the global market. Furthermore, issues of branding, lack of a website, and business management, would greatly enhance their work. Design thinking interventions could be built around the aforementioned areas in order to scale up the enterprise. Design could also be used to network this group with other similar enterprises across the country and globe so that they can share experiences, ideas and support innovation. The co-creation process can be used to network various basket weavers to form cooperatives. Due to the high penetration rate of mobile phones in rural areas, internet services can be co-created with baskets

weavers to assist them to enter new markets. The University of Botswana DESIS Lab and Botswana Institute for Technology Research and Innovation are already conducting research and offering co-created solutions (using natural resources and technology) in this sector to make it a viable sustainable benefaction business because it has a great potential to uplift the lives of the rural poor.

Discussion

When critical analysing the journey of the pioneer of Quality Baskets undertook, it represents the process of social innovation as proposed by Murray et al., 2010; Mulgan, 2006 and Mulgan et al., 2007. The pioneer of Quality Baskets was prompted by the poor performance and frustration she experienced in the basket weaving industry. She had some ideas on how she could start her own business. She started piloting her business by hiring other people to work for her. This did not work out as anticipated because the employees lacked commitment to their work. In resolving this impasse, the employees were made partners in the business. In order to sustain the business, more partners were trained from disadvantaged communities and they, in turn, trained other people from their own villages. This led to the scaling and the diffusion of the business. The authors suggest that design thinking could assist to network this group with other similar groups around the world to scale up and bring about systemic change.

It is worth noting that Quality Baskets network has now developed into a community of practice. The only obstacle is that this community is only based in one region of the country rather than nationally. They could make a massive impact if spread across the country. Most of the basket weavers are based in rural areas and some are semi-illiterate and do not keep up pace with information communication technology developments. In order to assist this community to conduct their business over the internet, some youth who are technologically savvy and have interest in basket weaving can be recruited to work hand-in-hand with this community. They will assist the group to network with other international groups over the internet and bring about what Wheatley & Frieze (2012) termed systems of influence.

The story of the pioneer of Quality Baskets has all the characteristics of a social innovator as discussed by Martin & Osberg (2007). It takes great courage for one to venture into the unknown thus opening her own business without any resources, business and management skills. She took direct action to move forward rather than waiting for someone else to intervene or look for other employment opportunity. She had the inspiration to change the status quo, but she could only do that if she had her own business. It took some creativity skills to establish the current network without any background in management. The management and spread of the network to help the marginalised people in the community is truly commendable. The network is continuing to touch the lives of many people who weave baskets but do not have direct access to the local and international market. This initiative has also assisted the basket weaving community from exploitation by some dealers who will buy the baskets at a very cheap price and then sell the same at exorbitant prices.

Conclusion

A small community of would be marginalised women and men in a group of small rural villages in the north-western part of Botswana have set up a self-sustaining and growing business enterprise is an exemplary social innovation initiative. The social innovator realised the need to address the poor economic situation she found herself in, and she used her skills and knowledge to set up a small basketry business. And recognising that there were many more people from her village in similar

levels of poverty, coupled with the need to grow her business, she started recruiting, training, motivating and partnering with the village people. More basket weavers from neighbouring villages joined the network and this led to the formation of an organised and symbiotic partnership, knowledge sharing and economic empowerment initiative.

Studies have shown that the social innovation approach employed by the Quality Baskets network is one of the most successful initiatives, as it is built on ideals guided by trust, commonality of needs and goals, and having an able social innovator with the ideal supportive environment. For the success story to be complete, however, there is a need for design thinking and business management interventions.

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YAHŞİBEY MAKEOVERS: PLAY, REPAIR AND CO-DESIGN

Mine Ovacık

Yaşar University

Lydia Matthews

Parsons, The New School for Design

Abstract

Yahşibey Makeovers: Repair, Play and Co-Design, the 30th workshop offered within the Emre Senan Design Foundation's summer workshops in rural Western Turkey, focused on working directly with Yahşibey residents to highlight local forms of slow design knowledge—particularly their methods of repairing, recycling and up-cycling materials within agricultural and domestic practices. We considered how villagers could be cast in the role of "Slow Design" mentors, and what we could offer them that might impact their quality of life? Our aim was to design playful and knowledge exchanges through dialogue that would provoke mutual insights about how contemporary wellbeing is designed and collectively produced within a community. Using participatory design methods to create performance events, interactive games and public signage, we highlighted stories that convey Yahşibey's valuable cultural heritage. Examined through the theoretical lens of Friere's "radical pedagogy" model, Schön's advocacy of "reflection-in-action", Fuad-Luke's six "Slow Design" assessment principles, Von Busch's cautious plea for "realdesign", and Nussbaum's "capabilities approach" to regional development, this paper will critically consider the workshop's strategies, outcomes, and challenges. It will also address how future co-design projects within the Izmir region are currently evolving. We argue that ethical design educators should acknowledge the rich teaching and learning opportunities available within rural contexts, and the profound need for developing more case studies to inform the emerging field of socially-engaged, co-design education and practice.

Keywords: *co-design, participatory design, slow design, storytelling, radical pedagogy, cross-generational, multi-disciplinary, cultural heritage, games, play.*

Introduction

Turkish design educators working within university contexts face a paradoxical situation. On the one hand, interest in the discourse of socially responsible, sustainable design education and "Slow Design" principals have only recently taken root in Turkey, emerging during the last ten years within local academic conferences, design biennales and projects¹. This emphasis on eco-centered design methods that promote de-accelerated lifestyles, individual empowerment, social justice, and collective wellbeing may at first appear "foreign" when compared to Turkey's dominant educational paradigm, which has dedicated itself to preparing design students to enter a profit-oriented industrial and post-industrial labor force within a rapidly developing country. Turkish educators who believe in the ethics of Slow Design typically find their sources of inspiration in educational models and that are flourishing in other countries (Mojoli & Manzini 2006), (SlowLab 2006- present), (Honoré 2004), (DESIS Network, 2009-present).

While global networking is essential when revamping design education programs so they may better respond to the urgent social and ecological needs of our time, Turkish designers and academicians often overlook the fact that many “Slow Design” values and methodologies have been embedded in their own country’s rural life for centuries. Practices such as material up-cycling, organic agricultural production, handcrafting clothing, and generally living with a minimal carbon footprint, still flourish beyond the urban centers where Turkish designers typically base their pedagogical and professional activities. Hence the paradox: why can’t our current desire to train young designers to be socially and environmentally responsible be informed by sources that are both global *and* local, as well as urban *and* rural? What would it mean for city-based designers and educators to recognize the wealth of pedagogical expertise that is available in our own back yards?

Project history

Institutional context: ESDF

Recognizing the value of situating contemporary Turkish design education in a small rural village, prominent graphic designers Emre Senan and Ayşegül İzer co-founded the Emre Senan Design Foundation (ESDF) and its *Yahşibey Design Workshops* in 2006. Designed by architect Nevzat Sayın, the elegant, minimalist ESDF workshop building is located in the center of Yahşibey village in the Aegean region of western Turkey. The villagers are mostly elderly members of low-income agrarian families who were born and raised in Yahşibey, combined with a handful of relative “newcomers,” including Senan and Izer, who have second homes in this peaceful community. The ESDF space and the village itself provide an alternative living and learning model for workshop participants, deliberately countering urban-centric, neo-liberal capitalist logic. ESDF insists that access to education is a human right that should operate within a gift economy, so Senan and Izer invite international design community leaders to voluntarily teach free summer workshops for promising young designers. For 15 days, selected participants work, debate, cook, eat, sleep, clean, explore and creatively dream together in a shared communal space. This immersive workshop environment encourages radical yet responsible experimentation. It aims to provoke questions about how creative individuals can contribute “to a sustainable future on the basis of social, political, economic and ecological relationships.” (Senan & Güven 2010). (Emre Senan Design Foundation, 2006), (ESDF 2010).

But how does a workshop experience in Yahşibey allow us to better understand what is “broken” in our educational system, built environment, and system of social relations? How can individuals from diverse backgrounds--cross-cultural, cross-disciplinary, and cross-generational--combine their approaches to “fixing things” with playing and working together”?

Workshop leaders

These questions were at the heart of “*Yahşibey Makeovers: Play, Repair And Co-Design*,” which marked the 30th ESDF two-week intensive workshop in the foundation’s history. The co-authors of this paper envisioned and facilitated this learning experience in July 2013. By combining our common interests in ethical creative practice, our diverse professional backgrounds in curating, industrial design and education, and our cross-cultural perspectives as women raised and educated in Turkey, Greece and the United States, we approached ESDF with an open-ended, co-design workshop brief that highlighted the importance of finding adventurous ways to study vernacular design in Yahşibey.

At its core, our workshop was based on the urgent need to practice a dialogical and non-hierarchical form of pedagogy. As Paolo Friere modeled in *Pedagogy of the Oppressed*: “*The*

teacher is no longer merely the-one-who-teaches, but one who is him/herself taught in dialogue with the students, who in turn while being taught also teach. They become jointly responsible for a process in which all grow" (Friere 1993). As workshop leaders, we decided to assume the role of facilitators and equal members of a design team rather than professorial authority figures. We wanted to challenge students to go beyond their comfort zones while still having fun--and if we expected this from them, then we could only expect the same of ourselves².

Design brief & pedagogical structure

In our workshop design brief, we posed the following questions:

- What is the relationship between research, creativity, play, repairing and risk-taking?
- Is imagination best understood as an individual or a social phenomenon?
- How are objects valued, de-valued and re-valued?
- Can repair be understood as therapeutic -and if so, what or who does it attempt to heal?
- What can people from different backgrounds learn from each other about coping with-and seeing?
- What can we make together that we wouldn't have been able to make alone?

We proposed to co-design a sequence of improvisational yet carefully designed "knowledge exchanges" between the workshop participants and Yahşibey residents. The form of these social exchanges, their specific goals, as well as the objects and images required to realize them, would be collectively determined and realized as the project unfolded. By structuring the brief in this open-ended way, we aimed to experience what Donald Schön has described as "reflection-in-action":

"The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings that have been implicit in his behavior. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation" (Shön 1983).

By envisioning the format of dialogical "workshops within our workshop," we sought to highlight the skills of ESDF participants and locals alike. Our aim was to learn about each other through the act of making things together. We would discuss what worked well and needed repairing in each of our daily lives. Subsequently, we would archive the locals' skills, stories, histories and legends. By acknowledging and respecting the villagers as our design mentors, we hoped to highlight sources of local cultural pride that were worth re-valuing and celebrating publically. We also aimed to discover problematic infrastructures and potentially broken social relations within the community that might need repair, which we would approach as opportunities for creative intervention.

Perhaps most importantly, we wanted to build trusting social relationships that were co-creative, especially since we conceived of our workshop as the first phase of an ongoing, multi-year co-design exchange between art/design students and local residents.

After ESDF accepted our workshop proposal, we issued an international call for student applicants. We selected 13 multidisciplinary art and design students, ranging in age from 6 to 45 years old³. In order to facilitate communication with the Yahşibey residents, we "curated" the group so that 60% of the participants were native speakers from design schools in Istanbul, Izmir and Ankara, and the other

40% were non-Turkish speaking students from Greece, Argentina and the United States. By designing our temporary community in this way, we could form smaller groups that included those familiar with the culture and others who were seeing it with fresh eyes.

Political protests

It is important to note that *Yahşibey Makeovers: Repair, Play and Co-Design* historically coincided with the violent political uprisings sparked by Gezi Park protests. Many of our students were among those protesting before arriving in Yahşibey. The villagers, while distant from the epicenters of violence, were fully aware of the political debates raging in that moment. This historical synchronicity colored our workshop experiences, and charged them with a sense of political urgency. The ethical underpinning of our ESDF activities echoed the resounding critical resistance to neo-liberal capitalist forces that favor individual economic profit over collective human and ecological wellbeing. The workshop's pedagogical ethos also challenged top-down authoritarian governance. Its focus targeted the rampant appeal of disposable consumer culture by exploring how rural villagers autonomously repair, recycle and up-cycle things of daily life, from mending damaged clothing to repurposing building materials to harvesting and distributing heirloom seeds. It also sparked conversations about what kinds of cultural traditions are worth re-valuing in both rural and urban settings, and what role autonomy and collectivity play in our lives.

Assessing project outcomes

The workshop's evolving outcomes included a variety of playful activities carefully designed to promote social exchange and hands-on skill and story sharing between the students and the villagers in meaningful locations. Some highlights included:

1. Knocking on villagers' doors during a "Scavenger Hunt" in search of broken, repaired and up-cycled objects;
2. Hosting an evening "Vinyl Social" in Yahşibey's only café, after hand delivering written invitations to the locals to drink tea with us, discuss their daily lives, take portraits of their family and friends, choose their favorite Turkish records and dance together⁴;
3. Repurposing the ESDF building into a day-long "Community Repair & Exchange Workshop" where villagers of all ages could bring broken objects to repair, their favorite recipes, sewing, gardening techniques, and memories and dreams about village life. In exchange, we offered them skill-building exercises, children's art classes, and the photographs shot during the Vinyl Social;
4. Inventorying of dozens of stories to debate which narratives represented the most interesting aspects of the villagers' cultural heritage, and which revealed what was truly "broken" in the village (i.e., problems included poor communication between generations and between Yahşibey's original residents and the newcomers);
5. Reclaiming an abandoned schoolyard for a "Town Hall" event, complete with snacks, painting lessons, and musical sing-alongs. Residents shared their visions for Yahşibey's future, and workshop participants described how local practices fit into larger global movements (e.g., how the act of harvesting heirloom seeds was linked to an international movement resisting corporate agriculture and genetically modified food);
6. Installing an iconic map entitled "Presenting Yahşibey: Cultural Histories and Local Legends" in the local bus stop, a major meeting point for commercial and social exchange between residents and visitors. The map synthesized highlights of the stories residents had shared during our various exchanges; (Figures 1, 2)



Figure 3. Memory card game: Children playing in Yahşibey Café

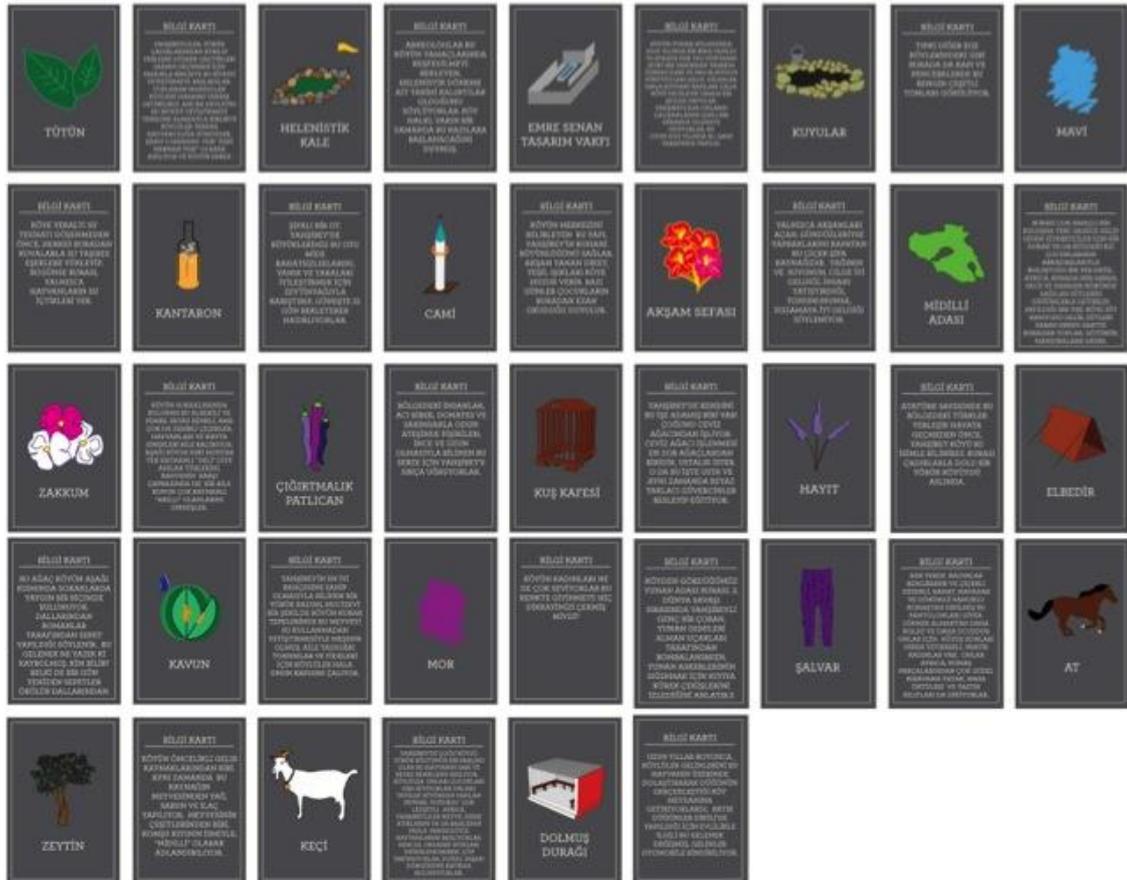


Figure 4. Memory card game playing cards



Figure 5. Final presentation of the workshop in front of the bus station

Each of these spatially conscious activities emerged out of a rigorous daily group critique. We have previously published the details of our collaborative design processes, and the dynamics and challenges we faced throughout our 15-day together (Matthews & Ovacık Dörtbaşı, 2013). Therefore, for the purposes of this article--which attempts to demonstrate the value of rurally-based design education--we have chosen to assess our project outcomes through the scope of Caroline F. Strauss and Alistair Fuad-Luke's "Six Slow Design Principles." These principles were published to function as an assessment tool, both to advocate for more socially-responsible and sustainable design practices, and more specifically to *"provide a lens through which to more intimately understand one's own identity as a designer, to reflect upon the design processes one employs, to evaluate tangible outcomes, and to imagine new scenarios"* (Strauss & Fuad-Luke 2008:3).

Principle 1: Reveal⁵

Making images, as a means of communication is something designers take for granted, but rarely experience with fresh eyes. By graphically manifesting and publically displaying the villagers' stories about their practice of everyday life through the map and games, everyone involved was able to literally see the ecological and social value of the villagers' ordinary habit patterns. As one local mother told us, *"You have shown us some examples of what we can do with things that others consider to be garbage. We did not realize before that we used tins as flowerpots, did not throw away broken things and used them for other purposes. You showed us that these are very valuable attitudes. It was important for us to hear that, and become more aware of the value in how we live."* (Matthews & Ovacık Dörtbaşı 2013:125). One student described her newfound appreciation for nonverbal expression as a tool to negotiate social and creative interactions: *"This experience taught me to communicate with people without talking. Even though all we are fluent in English, it is too hard to explain our imaginary design with words. At University, I got used to hear that "visualize your ideas" from all my professors, but Yahşibey is the place that made me learn the importance of images, sketches, etc."* (Matthews & Ovacık Dörtbaşı 2013:138).

Principle 2: Expand⁶

The village café was normally regarded as a solemn men's zone for drinking tea and conversing by day, typically remaining empty on nearly all summer nights, but our Vinyl Social transformed it into as a festive public space that capable of embracing men, women, children of all ages, as well as locals and foreigners. It became an opportunity for socializing and celebrating a dynamic community, reversing the conventional role of guests and hosts, with ESDF participants serving tea and entertainment.

Principle 3: Reflect⁷

Reporting back on their experiences gleaned from the Scavenger Hunt, the students reflected on a startling revelation: the villagers did not regard physically damaged or dismembered objects as "broken," so long as they had the potential of becoming useful in some way. A nonfunctioning washing machine had found new meaning as an advertising sign on the edge of town, and a plastic chair was not considered "broken" if it could remain upright with the help of string. "Broken," we realized, is a relative term that has to do with functionality and not physical appearance. The very act of questioning the word's meaning challenged students to rethink their consumer habits, and empowered villagers to understand their mundane domestic repairs as acts of "Slow Design".

Principle 4: Engage⁸

Every workshop activity involved a multi-disciplinary co-design process, with one project organically evolving from another through multiple deliberations and prototypes. Envisioning and executing the Yahşibey map, for example, required a monumental collaborative effort to evaluate and consolidate dozens of shared stories emanating from a variety of sources and moments in time. The interactive game design echoed the map, and the treasure hunt echoed the card desk, reinforcing and personalizing local stories by making them accessible to Yahşibey's children. As UNESCO has argued, one key aspect of intangible cultural heritage is that a community's stories and unique skills be passed from one generation to another, so the project was one modest gesture towards enabling that in the future (UNESCO 2003 - present).

Principle 5: Participate⁹

From the start of the project, the doors of the villager's houses and the ESDF building were opened up to each other for hospitable exchanges. In the words on one villager who reflected on their experience during the final presentation, *"Sol often hand-delivered photos to us in our houses during the early morning hours... We had tea that you offered in the ESDF, kids played there; they even wanted to go back there again to play the next day... We appreciated that everyone was able to establish real friendships with the students . . ."* (Matthews & Ovacık Dörtbaş 2013:124-125).

Principle 6: Evolve¹⁰

At the Town Hall event, a local retired schoolteacher described his vision for establishing an autonomous local market to highlight the fruits of local labor including unique agricultural and craft products, perhaps even offering free classes and performance events for children, etc. Many people became excited by these possibilities, which could spark politically urgent dialogues about the role of responsible entrepreneurship, the potential impact of cultural tourism and the contribution that thoughtful service design could make in the village.

Conclusion

There is a need for diverse case studies that encourage students to self-organize and engage in socially responsible creative collaborations with rural communities. But while rewarding, doing such work is not easy, and we face new challenges with each attempt to have our projects “evolve”.

Postscript

We recently returned to Yahşibey to plan our next activities, and were warmly greeted by the villagers, who reiterated their desire for us to work together again. They told us that during the past year, the elected Village Governor sold three agricultural fields surrounding the village in order to construct a new wedding hall. Some residents described it as a “good thing,” while others called it a “hideous building.” The fate of these sold agricultural fields is unclear. Our cultural heritage map had lasted through the winter, but had mysteriously disappeared in the last month. Kids still played the card game in the café, but wished for more activities. Yahşibey, we discovered, is no longer an autonomous village: it has been officially declared a “neighborhood” of the nearby town of Dikili, so that establishing a local business would involve more bureaucracy now.

In Turkey, profit-driven authoritarianism is simultaneously gaining strength alongside the growing discourse on socially responsible and eco-sensitive design education. How can the latter serve to resist the oppressive effects of former? As design theorist Otto von Busch astutely argued,

“The Realpolitik of design, let’s call it Realdesign, must restrain some of design’s naïve idealism and dream of peaceful progress, but without sacrificing any of design’s visionary imagination. It must start to see the world as it really is; yet still act towards what ought to be. But most crucially, the new proposed future we just designed must be safeguarded from the political forces that really is, the forces that seek domination through force and violence and which undermines the peace that ought to be ... initiatives must be sustained through the use of contracts and law, policies and activism, and in the end perhaps, by nonviolent force. In the Realpolitik of design, this is the cruel reality” Von Busch (2014).

Can conviviality; tactical play and collective brainstorming serve the practice of “realdesign”? What kinds of new alliances or specific skills will we need to support Yahşibey’s villagers and cultural heritage?

Rural communities have much to teach us, but we can also play a more significant role in helping them cultivate new capabilities--particularly if we all aim to make the learning experience a pleasure. Philosopher Martha Nussbaum has argued that we must measure human development not by relying on conventional economic indicators, but rather by taking a “capabilities approach” Nussbaum (2011). She asks, what is each person actually able to do, and to be? What real opportunities are available to them? Cultivating communal wellbeing and enabling people to live full and creative lives requires first listening to their narratives, and then fully grasping the daily impact of policy before deciding how to proceed¹¹.

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Endnotes

¹ In Turkey, most design fields (including industrial design, graphic design, and visual communication design,

etc.) began to develop an active discourse on issues of sustainability, ethics, social and ecological responsibility, collaboration, slow design, etc., since the middle of the 2000's. Artists, designers, and academicians have been conducting research projects as well as exhibiting their results through publications, keynote speakers' notes printed in the proceeding books of symposiums, conferences and congresses, exhibitions and websites: e.g., 1st and 2nd Agrindustrial Design Symposium (2004, 2012, İzmir), -1st Product and Service Symposium and Exhibition on Agricultural Industries - (Izmir University of Economics, 2006:11-20), 3rd National Design Congress: "To Discuss Design in Turkey" (2006, İstanbul) (Istanbul Technical University, Department of Industrial Design, 2006:191-199), EAD 07 Conference: Dancing with Disorder: Design, Discourse, Disaster (2007, İzmir) (Izmir University of Economics, 2007), 4rd National Design Congress: "Design or Crises" (2009, İstanbul) (Istanbul Technical University, EÜTB, 2009: 31, 87, 239, 327, 355), 1st Istanbul Design Biennale (2012, İstanbul), (IKSV, 2012), Port Izmir Triennial 3 "It's Enough!" (2014, İzmir), (Port Izmir 3, 2014). These are just some of these activities. Architecture and Urban design, on the other hand, began to engage such issues as early as the 1960's and 70's, an outgrowth of leftist ideology and social activism.

² This attitude towards incorporating radical pedagogy into our project recognizes the work of Cynthia Lawson's DEED project at Parsons The New School for Design. See: Lawson (2011).

³ Participants (first names are in alphabetic order)

- i. Abby Lal (B.A., 2013 in Design and Management from Parsons The New School for Design, New York, USA)
- ii. Bilge Merve Aktaş (B.S. 2013, Industrial Design, İstanbul Technical University, İstanbul, Turkey)
- iii. Cem Bakış (3rd Year, Industrial Design, Marmara University, İstanbul, Turkey)
- iv. Çınar Ege Dörtbaşı ((6-year old) Egiad Primary School, 2nd Year, Urla – İzmir, Turkey)
- v. Gökhan Külçe (4th Year, Industrial Design, İzmir University of Economics, İzmir, Turkey)
- vi. Hazal Işık (3rd Year, Industrial Design, Yaşar University, İzmir, Turkey)
- vii. Kaija Cedras (Junior, Linguistics major, University of Oregon, Eugene, Oregon, USA)
- viii. Mine Dilara Toksoy (3rd Year, Industrial Design, İstanbul Technical University, İstanbul, Turkey)
- ix. Nikos Chatziliias (5th Year, Product and System Engineering, University of the Aegean, Ermoupolis, Syros, Greece)
- x. Sarah Lillenberg (2nd Year, Design Studies Graduate Program, Parsons The New School for Design, New York)
- xi. Sevi Merter (2nd Year, Design Studies Graduate Program, İzmir University of Economics, İzmir, Turkey) Research Assistant at Yaşar University, İzmir, Turkey)
- xii. Sezgi Kaya (2nd Year, Industrial Design, Middle East Technical University, Ankara, Turkey)
- xiii. Sol Aramendi (2nd Year, MFA Program with in Social Practice, Queens College – City University of New York, New York)

⁴ The *Vinyl Social* was a project conceived and organized by one artist in the workshop, Sol Aramendi.

⁵ Principle 1. **Reveal**: Slow design reveals experiences in everyday life that are often missed or forgotten, including the materials and processes that can be easily overlooked in an artifact's existence or creation. (Strauss & Fuad-Luke 2008:3)

⁶ Principle 2. **Expand**: Slow design considers the real and potential "expressions" of artifacts and environments beyond their perceived functionalities, physical attributes and lifespans (Strauss & Fuad-Luke 2008:4).

⁷ Principle 3. **Reflect**: Slow Design artifacts/environments/experiences induce contemplation and what slowLab has coined 'reflective consumption (Strauss & Fuad-Luke 2008:5).'

⁸ Principle 4. **Engage**: Slow Design processes are open-source and collaborative, relying on sharing, co-operation and transparency of information so that designs may continue to evolve into the future (Strauss & Fuad-Luke 2008:6).

⁹ Principle 5. **Participate**: Slow Design encourages users to become active participants in the design process, embracing ideas of conviviality and exchange to foster social accountability and enhance communities (Strauss & Fuad-Luke 2008:6).

¹⁰ Principle 6. **Evolve**: Slow Design recognizes that richer experiences can emerge from the dynamic maturation of artifacts, environments and systems over time. Looking beyond the needs and circumstances of the present day, slow designs are (behavioral) change agents (Strauss & Fuad-Luke 2008:7).

¹¹ The discussion of Nussbaum and Amartya Sen's work on the capabilities approach and its relevance to design discourse was introduced in a recent presentation by Otto von Busch entitled "The Capability to do What?" at the Politics and the Question of Form conference The New School, May 12, 2014

ENVISIONING THE FUTURE OF OPEN SPACE IN THE INNER -CITY OF JOHANNESBURG

Finzi E Saidi

University of Johannesburg

Abstract

Inner-city open spaces are, in addition to being the “breathing spaces” of the build-up-city, the sites of aspirations, cultural celebrations and struggles for city inhabitants. Cities thrive on vibrant open spaces through which the citizens express themselves in the public realm. Public open spaces are as dynamic as the cities themselves. As the City of Johannesburg continues to be revitalised, the buildings and open spaces in the inner city are a constant state of flux in order to accommodate the new and sometimes conflicting needs of the people. Open spaces in the inner-city of Johannesburg have been re-designed or revitalised, driven, in part, by the need to revive parts of the city that have fallen into degradation and also by the City’s hosting of large stage events such as the 2010 Soccer World Cup- as evidenced by the 5-aside soccer pitches in some of the Inner-City’s open space. This paper examines three open spaces in the Inner- City of Johannesburg: End Street Park; Mary Fitzgerald Square; and Attwell Gardens Park in terms of a 12-point-criterion for pedestrian landscape. The study uses the 12-point-criteria to suggest the potential of open spaces within the Johannesburg Inner-city within the City and private developers could plan for revitalising of the inner-city. The paper uses participant observation methodology to record public activities and designed features of the selected sites in order to assess performance of the open space. The observations analysed against the criteria so that performance of the open space can be evaluated. The paper outlines development aspects of open inner-city spaces that have performed poorly in recently upgraded open spaces in the inner-city of Johannesburg due to short-term (aesthetic) objectives of inner-city spaces. The paper further suggests how urban regeneration projects could include open space developments to ensure sustainable development.

Keywords: *Inner-city, regeneration, informal traders Public Open Space, Performance, Criteria, Pedestrian landscape.*

Introduction

Open space in the Inner-city is considered as the “lungs” of the City that provides respite to the multitudes of people that frequent the city on a daily basis (Howard:1946). From ancient times a one key feature that has been consistent in the making of cities is open space. Yet increasingly, in contemporary society open space is hardly planned for in systematic manner, often times it is left derelict and even more disastrously it is appropriated for development (Mensah 2014). The spectrum of open space in the inner city varies from well-manicured civic spaces that are surrounded by corporate businesses to poorly maintained but well-used hard landscapes that bordered by informal activities as well as serve as resting places for the city inhabitants. A few soft green open spaces can

be found in the inner-city. Whatever the use that open space is put to in the inner-city, it is clear that open spaces are important features of cities.

The City of Johannesburg has in the recent past, renovated numerous open spaces around the inner-city for many reasons, the most obvious being the preparation for the 2010 World Cup due to the need to present, to the outside world, a clean and functioning city but also largely as part of regeneration of its run-down infrastructure following changes in the inhabitants that use the City. New developments that brought new kinds of residential developments such as Brickfields in Newtown precinct, and other buildings that have been converted for residential use, means that the inner-city open space has to respond to wider brief of use than previously. Increasingly the inner-city has also seen a proliferation of private schools that occupy most the upper floors of most buildings. This is so because most of these building were abandoned by businesses during the flight to the northern suburbs during the pre-democracy era before 1994. Thus only the ground levels of buildings were initially occupied by retail businesses that took advantage of pedestrians at ground level, while the upper floors remained empty. Schools have recently begun to occupy the empty upper floors of building in the inner-city. This means that the city hosts large number of children during the day, that need to have access to open space for their own physical development (AIJ 2002: 191)but more so due to being locked up in buildings during the learning hours. The implication for this is that the user of open space is not only the working class, but that it must include school-going age children. If one were to think of children alone in open spaces of the inner-city, it becomes evident that this is not a simple task of providing play areas and sitting places. The inner-city open space design has to consider wider issues of learning, access to food, safety, transportation, security and many other competing interests and opportunities that will arise (Childs:2004). Crime and homelessness have for a long time been the main problem in the inner-city of Johannesburg as such open spaces are susceptible to crime and illegal occupation.



Figure 1 Map of Johannesburg CBD showing the three sites: Mary Fitzgerald Square, Attwell Park and End Street Park.

This paper studies the performance of three open spaces Mary Fitzgerald Square, Attwell Park and End Street Park (Figure 1) against Gehl's 12-Point criteria for developing functioning inner-city open space as a starting point for defining criteria for the City of Johannesburg open spaces.

12 point criteria open space criteria.

Gehl proposes three main themes that guide successful pedestrian open spaces in the city: Protection, Comfort and Delight (Gehl et al: 2006). Under each theme are a number of principles that help to achieve the objectives of the theme. The themes are outlined as follows:

Protection:

- against unpleasant sensory experiences
- against traffic and accidents – feeling safe
- against crime and violent- feeling secure

Comfort

- opportunities to walk
- opportunities to stand /stay
- opportunities to sit
- opportunities to see
- opportunities to talk and listen
- opportunities for play and exercise

Delight

- scale buildings and spaces designed to human scale
- opportunities to enjoy the positive aspects climate
- positive sensory experiences

Gehl's criteria were adopted in this study mainly because it addresses fundamental aspects of human interaction with open space in the built environment - mainly at a pedestrian level. These principles are deemed to have universal application and can be applied to the three case studies in the inner-city of Johannesburg that this study dealt with.

End Street Park

End Street Park is located on the central eastern part of the Johannesburg in a precinct surrounded by mid-to high-rise (six to twenty storeys) buildings. The visual appearance of the area suggests that the buildings have been long abandoned by the corporate tenants and is now occupied by semi-formal and educational business. The current occupants of the buildings around End Street Park are schools that accommodate children from grades zero to twelve and generally small-scale retail businesses. The park consists of three sections, the children's play area that is completely fenced off with a galvanised steel palisade fence; the central section which serves as the main access route as well as the main seating space; and three astro-turfed five-a-side soccer pitches which are completely enclosed with play structures for older children (see Figure 1). Children use the park under supervision of school staff or sometimes the guards act as supervisors.



Figure 2: End Street Park- source author: 2014

In terms of Gehl's criteria End Street Park, provides real opportunities for children to play during the day as it is readily accessible by all schools in the precinct and is intensely used after school for ball games like soccer. The soft astro turf playing surfaces are child friendly making it comfortable and enjoyable for children. The visual appearance of the park is stimulating in terms of the colour and shapes of playing surfaces and structures. The park has a number of benches which creates opportunities for sitting talking and looking. The trees in the west of the park create shade for protection against summer heat and direct sunlight. By and large, the sitting areas provide opportunity to enjoy the winter sunlight make the park a popular stopping point in winter. Once in the park, the children do feel protected from the busy vehicular traffic that surrounds the park on three edges. The palisade fence provides protection from vehicles and in that way ensures safety for the park users who are mainly children. Around the park there is adequate room for walking on the wide side-walk that abuts the fencing.

The park's main negative features in terms of the Gehl's 12-point- criteria are that it is "detached" from the surrounding building in the sense that there is no opportunity to link sitting opportunities in the park with sitting in the surrounding buildings mainly because of the traffic that enforces the separation of the buildings and the park. This sense of detachment of park means that there is little opportunity for people in the surrounding buildings to look and enjoy the activities of the park, which would also enhance the safety of the children with "eyes-on-the-street" as passive surveillance. While the height of surrounding buildings relative to length and breadth (sixty to hundred metres) of the park appears to be reasonable to the human scale, the road network creates a visual chasm that enforces the demarcation between buildings and the park. The palisade fence that surrounds the small children's play area was designed as a delightful element, but the need have a robust fence shows that the city authorities wield more power over the design of elements than what the designer had intended. The design of park elements i.e. benches, fence, bins and light fittings is inconsistent meaning that an opportunity to create a unique "End Street Park visual language" and identity was missed. The

opportunity to have overlapping activities between buildings and park is lost. Because the main function of the area is mostly schooling and small retail shops, the park has no night life to speak of and is potentially a dangerous area for everyone at nightfall. In summary End Street Park as an inner-city park works for children and day users. Its integration with buildings remains unrealised which affects its' functioning as a successful park for multiple city users. Achievement of protection, comfort and delight is therefore only partially met.

Mary Fitzgerald Square

Mary Fitzgerald Square is an open space that is located in the Cultural and Historic Precinct on the western edge of inner-city of Johannesburg. On the northern edge of the square lies the Museum of Africa and the Market Theatre: the Mine Workers Museum is on the south eastern side, with the M1 double-deck highway forming the western edge of the square. The square has busy road networks on three side except for eastern edge where direct access from the building to the square present an opportunity for activities "spill over" to the square in relative safety.

In terms of scale the square is vast making it an unattractive space for individual users and to some extent unsafe because of lack of passive surveillance provided by adjacent activities. The Museum façade presents a bland face to the square that generates no activities. The square works well for big events such as concerts and public demonstrations that are made up of thousands of people. The square is sparsely vegetated nor does it have structures that could provide shade from the intense summer sun. Only on the northern edge of the site are located trees that provide shade for users (see figure 3) Opportunities to sit are few in the vast square and the noise from surrounding traffic does not encourage talking. The restaurants on the southern side of the square enable some degree of nightlife for square users but because of the scale (more than a hundred meters in length) and design, the square's utilisation hardly goes beyond that of a parking space. The street elements of bollards have been designed in an artistic fashion to enhance its identity as a cultural precinct.

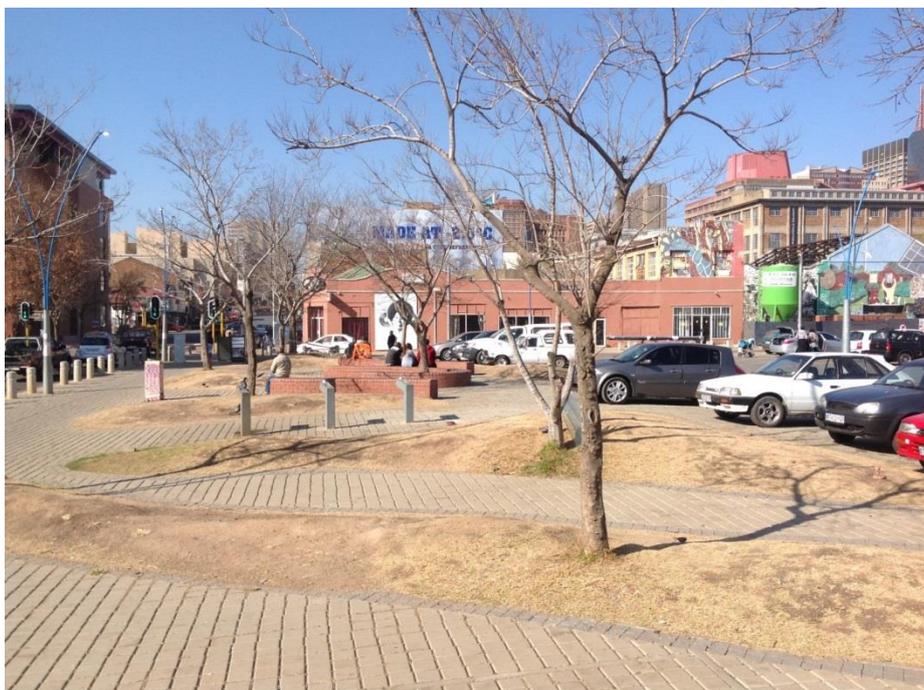


Figure 3: Mary Fitzgerald Square - showing the sitting area on the northern side. Source author 2014

The square continues to be used by large crowds of civic protestors fighting their rights and against any forms of injustices. The site has also hosted large musical festivals such as the Johannesburg Joy of Jazz festival on a yearly basis. In summary although Mary Fitzgerald Square forms part of an important inner-city cultural precinct, but its scale and design does little to encourage the everyday user to visit and use the site. The square lacks a critical mass of functions that would encourage more people use it.

Attwell Gardens Park

This space is potentially one of the most interesting spaces in the city because it begins to address the needs of newcomer to inner-city Johannesburg because Park Station is located on the northern side of the building, a private school on the eastern edge and the Home Affairs Building is a few blocks away to the south-west. Attwell Park becomes a major point of orientation for the visitor (local or foreign) who comes to Johannesburg by either train or bus upon arrival at Park Station. The park is appropriate in terms of scale as it is surrounded on all side with an average of four storeys structures with ample side-walks for walking and trading on all sides. The curious factor in terms of design of the park is that it has been fenced off with a palisade fence with control gate access points which suggesting that access is regulated. The intention of the fence was to retain the integrity of the park by stopping invasion by informal traders who operate all around the park and the homeless people. Informal traders include selling fruit and vegetables, cooked food, hair stylist and barbers who operate either on designated places or on the side walk.

On all sides of the Park there is sufficient sidewalks so much that all sorts of informal businesses are conducted that take advantage of the constant follow of pedestrians walking to and from Park Station. On the eastern side of Attwell Park is a school whose pupils utilise the park for a recreation. Direct access from the school to the park is blocked by a linear market. The park consists of a playing surface for 5-A-side soccer; a children play area; a basket court; and places for leisurely sitting and talking amidst the heavy traffic on all side of the park (Figure 4).



Figure 4: Attwell Gardens Park. Source author 2014.

Attwell Park has the right scale for an urban open space that is surrounded by four storey high-rise buildings of an appropriate scale. It has a good feeling about it and at any one day is well used by the public of all ages. The fence protects the users especially children from the heavy traffic. The Park is well lit and has ample trees and sitting places to provide for a pleasant sensory feeling. The sidewalks are wide enough to allow for pedestrians and for trading stalls.

The palisade fencing and the vehicular traffic isolate Attwell Park from its surroundings completely such that there is little opportunity for shared activities between the buildings and the Park. The fencing limits use of park. Lack of maintenance is a obvious problem for the Park because of intensity of its' use.

Attwell Park provides protection, comfort and delight to its users but it fails to integrate with its surroundings and also to respond to the needs of traders who do their business in makeshift stalls.

Synthesis

What is very clear in understanding the three public open spaces discussed above is that they all contribute to the urban quality of life of inhabitants of in the inner-city of Johannesburg. It is also clear that when Gehl's 12-point-criteria for successful pedestrian landscape are used to assess the performance of each open space, all landscapes are found to be lacking in quality. Perhaps the biggest concern is that all the projects appear to be "islands in the city." They lack vitality in terms of meaningful integration with surrounding buildings that will enhance spill-over activities that will ensure sustained use of the open spaces over longer periods of time that will enhance safety and rich urban cultures to evolve in the inner-city. In all three projects scale plays a critical role in stimulating integration, safety and crime free open spaces. Two modes of operation scale can be noted to be in operation for the three spaces discussed here. One is the horizontal scale that influences the ability of people to recognise facial features within a distance up to sixty metres (one typical Johannesburg block size). This ensures a sense of safety of the people in park within such distances. Both Endstreet and Attwell Parks are within this scale and so they have a higher sense of safety than the users feel in Mary Fitzgerald Square. The second scale is terms of the surrounding buildings of the parks. The ideal height for buildings is exhibited by the medieval cities with four to five storeys high buildings. The sense of enclosure to an open space and the ability to overlook a park instils a sense of safety in the users of the parks. For this study the park which exhibited a strong sense of safety was Attwell Park mainly because of the low rise buildings (four to five storeys) on three of its sides, the eastern, southern and northern boundaries. Mary Fitzgerald Square which surrounded by single and double storey buildings on northern, eastern and southern boundaries exhibited the weakest sense of safety because of a weak sense of enclosure and lack of surveillance from the surrounding buildings.

Inclusion of fencing in two of three the open spaces discussed above points to failure to produce robust and rich urban landscape that stimulates multiple users. Contribute to the total urban quality of life- the 24-hour-city- in minimal is the above cases. In all open spaces, it very evident that vehicular traffic around the public spaces is an obstacle to utilisation of the parks and their integration to the surrounding buildings. The study reveals that, even though the open spaces have been renovated, conflicting and competing user interests related to the parks have not been resolved while new uses have arisen. Lastly it clear that in all open spaces, lack of a multiple user density, means that open space designed for mostly one group i.e. school children, leads to dormant periods of use of the open spaces that are unsustainable in terms of the city.

Conclusion

The discussion above, suggests that open space quality when measured against the 12-point- criteria, is low and that the open spaces are not meeting the needs of users in the inner-city. There is sense of isolation in terms of the open spaces functioning as part of the businesses, be it formal or informal. The solution to this isolation lies in a collaborative approach between users and their agents, the business community and the City authorities. While the users and their agents can articulate their needs for open spaces in the inner-city, the city authorities need to engage with the business community to explore ways that investment in open spaces can be rewarded by granting such developers tax incentives opportunities. There is a need to review local authority policy on open spaces in the inner-city. This is probably the most sustainable manner in which open spaces that are functioning and contributing to the economy of the inner-city can be created that respond to the broader scope of open space users in the inner- city. If the state of three open spaces discussed in this paper is a measure of the success of the open spaces in the inner-city of Johannesburg, then there is need for urgent review of open space strategy and policy in the City of Johannesburg.

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REVIVING COMMUNITIES THROUGH STORYTELLING AND CREATIVE ACTION

Deepa Sateesh

Srishti School of Art, Design and Technology

Kabir Bavikatte

United Nations University

Abhishek Choudhury

Srishti School of Art, Design and Technology

Lesle Jansen

Natural Justice

Abstract

The Khoi-San, the First-Nations' people of South Africa, were dispossessed of their lands and subjected to a cultural genocide, first by colonialism and then by Apartheid. Labeled 'colored' during the Apartheid era, the Khoi-San were victims of cultural annihilation in which they lost their social and spiritual institutions that held their identity. The systematic and deliberate erasure of their culture has led to collective historical trauma. Today, the Khoi-San are battling gangsterism, drug abuse and fetal alcohol syndrome, endemic to the community. Natural Justice, an international NGO of lawyers for community and environment has for several years assisted the Khoi-San in their legal struggle to assert secure rights to their land and heritage. However, legal and material support has been insufficient in healing this historical trauma. The absence of positive community role models or heroes has disillusioned the Khoi-San youth, creating a need for cultural and spiritual healing. From this need the Heroes Project was born and is a collaborative work to reinvigorate the spirit of the community and enable them to address their contemporary issues. The project, housed at the Law+Environment+Design Laboratory, brings into the forefront the key role design plays in enabling communities; through creative and critical thinking, design and open innovation, to catalyze and activate imaginations for positive change. The Heroes Project was conceived from mythologist Joseph Campbell's ideas of the 'hero's journey'. Based on this monomyth, the project seeks to create a series of graphic narratives that contemporize Khoi-San folklore and mythology to reconnect them with the youth. The project is a unique interdisciplinary collaboration among designers, lawyers and artists to conceptualize creative interventions for socio-political change. It is not merely designing graphic narratives, but engaging with the deep knowledge of experts, participation with community, and imagine the possibilities of this project beyond these graphic narratives.

Keywords: Khoi-San, design, narratives, cultural trauma, heroes.

Background

Many indigenous peoples have been dispossessed of their lands and subjected to discrimination and cultural genocide first by colonialism and then by settler capitalism. The years of assault on indigenous

communities destroy their social fabric and deprive them of the cultural and spiritual resources needed to launch a successful struggle to secure their rights as indigenous peoples. To make matters worse the cultural and spiritual annihilation of many indigenous communities has sapped their youth of pride in their identity and denying them the inspiration needed for the legal and political battles ahead.

The material impoverishment and erasure of the cultural and spiritual traditions of the Khoi-San, the First Nations people of South Africa, has had devastating consequences on the community. In the Western Cape, gangsterism (Daniels and Adams, 2010:47), alcohol and drug abuse and fetal alcohol syndrome (Vuuren and Learmonth, 2013:59) are endemic amongst the Khoi-San youth (also labelled as 'coloured') and they account for 60-80% of the prison population.

The Past – Contentious Landscapes

The situation of the Khoi-San and indigenous peoples with similar experiences is one of collective trauma. Collective trauma is understood here as a consequence of deeply disruptive events that have a negative impact on the unconscious of a group. While the memories of these events are repressed and the group may still be able to function with a semblance of normality, the repressed emotions from the trauma manifest themselves into consciousness and daily life in insidious ways. For example, collective trauma may be manifested as a negativity bias based on which an individual may habitually make choices that are self-sabotaging such as substance abuse or violence despite options to the contrary (Fanon 2008).

Collective trauma is a result of centuries of systematic destruction of social and cultural institutions of the community. The condition of the Khoi-San, the Native Americans or the Australian Aborigines is quite unlike the cases of other groups who have experienced traumatic events, wherein the larger community to which these groups belong to is able to muster spiritual or cultural resources to heal their trauma. The condition of these groups is one where virtually the entire community was uniformly traumatized and institutions designed to address such trauma were systematically destroyed. Their inability to heal collective trauma can be substantially attributed to the loss of cultural and spiritual resources ('immune systems') that can restore people and repair culture (Lambert 2008).

This is one of the main reasons behind the Khoi-San's inability to effectively capitalize on their legal and political victories and material gains in democratic South Africa. This is especially so in terms of Khoi-San victories over the last ten years which include land restitution and high profile access and benefit sharing agreements relating to their traditional knowledge of the hoodia, rooibos and sceletium plants. Despite these victories, the Khoi-San are mired in internal conflict, entrenched leadership, low levels of higher education, endemic unemployment and widespread substance abuse and violence. The situation of the Khoi-San begs the question regarding the effectiveness of the various rights gains and innovative financing mechanisms in international and domestic environmental and indigenous peoples rights discourse.

The reality of collective trauma requires us to move beyond normative public statements and rights speak that link indigenous people's ways of life to stewarding the Earth. It forces us to address the stark reality of psychological trauma and social conflict amongst numerous indigenous communities and focus on solutions to these problems that go hand in hand with rights campaigns.

The Opportunity – Collaboration and Creativity

The re-building of traumatized groups into strong community with authentic leaders requires a new approach that not only focuses on the material, legal and political challenges but also seeks to heal the collective trauma. Natural Justice (Lawyers for Communities and the Environment), an international collective of lawyers headquartered in Cape Town, has for several years focused on providing legal assistance to indigenous peoples and local communities that would lead to wellbeing through secure rights to their lands and culture.

Seeing that the legal and material support has been inadequate for these traumatized communities, Natural Justice initiated the Heroes Project in 2013 with the Law+Environment+Design Laboratory (LEDLaboratory) based in Bangalore, India. The LEDLaboratory, a collaborative initiative of the Srishti School of Art, Design and Technology, and Natural Justice, is set up to address challenges in contentious landscapes, brings into the forefront the key role design can play in enabling communities and catalyzing ecological justice; through creative and critical thinking, design methodologies and open innovation, to catalyze and activate imaginations for positive change. The aim of the partnership is to develop innovative design possibilities within the Heroes Project to address the issue of collective trauma faced by the Khoi-San communities and effectively complement the rights-related work of Natural Justice.

The Heroes Project is inspired by the work of mythologist Joseph Campbell who articulated the common myth (monomyth) of the 'hero's journey' in cultures across the world. Campbell outlined the three typical stages of the hero's journey: *separation*, *initiation* and *return*. Each of these stages involves several milestones and the journey is a typical sequence of actions in hero stories across the world throughout history (Campbell, 2008). The Heroes Project seeks to work with Khoi-San youth to engage in selective revival of myths, rituals, rites of passage and ceremonies that resonate with the three stages of the hero's journey. The aim is to facilitate healing of their collective trauma and replacing dysfunctional coping mechanisms.

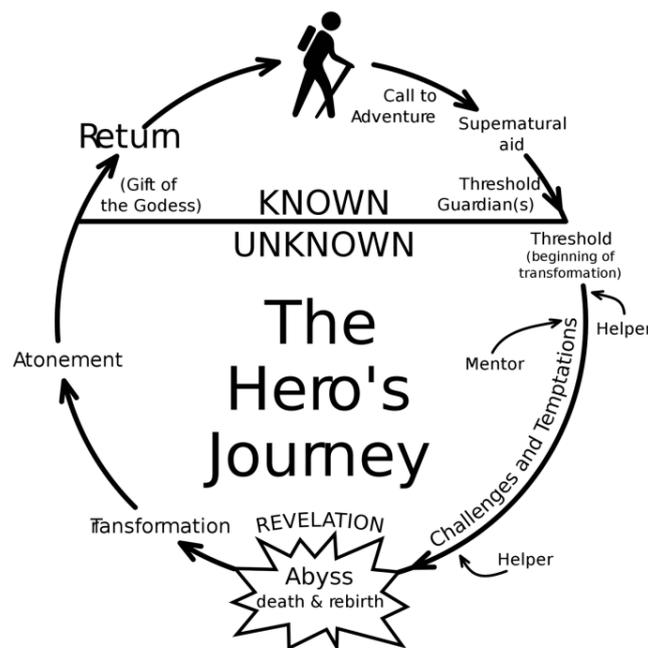


Figure 1. *The Hero's Journey Monomyth.*

The Present – Design Possibilities

The Heroes Project is to act as a catalyst for positive change in the Khoi-San youth in a number of ways, where the outcomes may:

- Be a tool for community members to negotiate their present day difficulties through the learnings of the community leaders;
- Be a source to learn about authentic leadership that is value-based; these values are those highlighted by leaders present today;
- Empower the community by allowing them to engage with this project through their own journeys that chronicle their hero moments, making them more aware of each other's strengths;
- Provide an avenue that can fuel a spirit of adventure and curiosity among the youth about their history and elders as the narrative is embedded in their myths; and
- Chronicle live stories that will allow for dialogue between community members in creative and personal ways.

The desired intervention is a graphic narrative series. However, before engaging in narrative building, an exploration of possibilities was carried out through research, illustrations, immersion into the context and character design, to imagine the people, places, issues and events, and arrive at various forms of interventions. Phase I was run as an undergraduate design diploma project, to discover the possibilities.

Exploring Methods & Forms

The Heroes Project first launched a complete immersion into the context of the Cape Flats and Khoi-San culture, past and present. This included understanding the nature of myths and what roles myths and beliefs play in their culture. According to Carl Jung, myths are public dreams and are responsible for the collective unconscious (Jung, 1968:3-41).

One of the larger initial design challenges was making the leap across cultures, histories, practices and beliefs. Along with the research it was important to develop sensitivity for the socio-political and cultural issues at the Cape Flats, from across continents. To help comprehend the extent of collective trauma and cultural loss, the design team observed that Khoi-San history is today's story in the northeast of India, where the current volatile political situation can potentially result in similar cultural collective trauma of the youth.

Khoi-San folklore and mythology provided a lens to understanding the community in the pre-colonial era through an appreciation for metaphors, analogies and symbols. The ancient Khoi-San had an extraordinary relationship and ability to communicate with nature and the universe at large. Their interactions with nature were cleverly interwoven into their stories and poems. How do we read ancient myths and current local stories and contemporize Khoi-San culture through the visual medium?

A graphic narrative's appeal largely depends on the visual language and design that need to be embedded in the visual identity of the region. It was here that an in-depth study of visual styles of the Khoi-San revealed what lay beyond their rock cave paintings – a spiritual realm where myths come alive. This discovery enriched the process of narrative building and character design. Current cultural

modes of expression were explored, including Afro-Futurism, performing arts, music, and popular literature. The strategy for Phase I of the project was to develop a participatory social tool that was able to engage the community, to capture the voice of the youth, in an open and mindful space. It was necessary for engagement to be playful, to inspire and build a platform to share stories.

The graphic narratives needed real stories of local heroes. A workshop, designed based on theatre games and shadow puppetry, was facilitated in collaboration with local artists, at a community centre in the Cape Flats, where the youth participated in sharing stories, through music, theatre exercises, beat boxing, and other spatial and performative activities, that enabled the youth to play, create and share ideas. The visual cues and aids through the workshop activities and storytelling were the characters designed for the Heroes Project narrative. The characters, derived from Khoi-San mythology, were designed and developed based on Carl Jung's archetypes.



Figure 2. Shadow puppetry at the Heroes Workshop (2013)

Cave Paintings, Archetypes and Characters

The characters are based on spiritually significant animals and their therianthropes seen in rock cave paintings. Therianthropes are visual representations of the state of being half human and half animal. The character design and development were based on beliefs and myths surrounding the animals and their therianthropic forms. The main characters, inspired by the five spiritually significant animals from Khoi-San stories, are the lion, the jackal, the baboon, the eland and the mantis. These mythological characters were overlaid onto the four Jungian archetypes: the king, the lover, the wizard and the warrior. The fifth character, the mantis, is based on the archetype of the 'supernatural aid' from Joseph Campbell's monomyth.

According to Khoi-San beliefs, the lion is a strong beast but is naive and foolish. The lion is seldom the one that triumphs at the end of the story. The character of the lion was developed on the Jungian archetype of the 'warrior'. The character of the baboon is based on the Jungian archetype of the 'wizard'. In Khoi-San tradition the baboon has a notorious reputation and is mischievous, unpredictable and has shamanic powers. The baboon character in the story must seek to find a balance between a manipulator and being manipulated. Unlike most myths, here the nature of the jackal is seen as a protective guardian, always looking after the hunters. The jackal's character is

adapted from the Jungian archetype of the 'lover' (Moore and Gillette, 1990). The eland is the most spiritually significant animal in Khoi-San mythology; often referred to as the 'rain animal', it is believed to be the most spiritually potent by the Khoi-San. The largest antelope in South Africa, the eland's character is based on the Jungian archetype of the 'king'.



Figure 3. Final illustrations of the characters (2013)

The fifth character, inspired by the mantis, is the Khoi-San deity */Kaggen*. */Kaggen* is said to be a shape-shifting bushman shaman attributed to have created the moon and antelopes. This shape-shifting Khoi-San deity, although a trickster by nature, plays a great role in imparting wisdom.

Through the workshop teenagers from the Cape Flats shared stories through shadow puppetry, drama games, role-play, and beat box improvisations, all contributing to collecting stories to be adapted in developing the graphic narratives.

A mammoth challenge of undertaking a design impact project is community consent and participation. Early in the project, with Natural Justice, the National Khoi-San Council was consulted for approval to embark on this journey. With this consent and the success of the workshop in capturing individual journeys and events in the Cape Flats, the Heroes Project, poised to begin creating narratives, launched into Phase II.

Phase II: Origin Story Creation

The series of narratives to be developed are the individual stories of the four characters, intertwined through events, relationships and challenges, who move into an unknown future with */Kaggen*. This creative storytelling required the construction of a meta-narrative and structure, bringing together history, fiction, characters and their past, the uncertain volatile context of today, and the hope that lies ahead. The hero's journey inspired the structure of this meta-narrative, and helped to enrich and detail the characters' appearances, expressions and interpersonal dynamics.

It is in Phase II that the Cape Flats history and */Kaggen's* story emerge, inspired by current prison mythology surrounding the origins of the 'Numbers Gang'. An elaborate story of */Kaggen* and his trials has been developed simultaneously, set in the apartheid years and Post-independence South Africa.

The co-creation of the graphic narrative script is a unique story in itself that crosses disciplines and geographies; unlike most graphic narratives, the Heroes Project scripts are driven by the visual storyboards. Based on the interpretation of the storyboards, a rough script was written and incorporated, coordinating among lawyers and designers, pushing each other's' imaginations and boundaries, revealing possibilities of positive choices for the Khoi-San youth.

The Future

The power of heroes and their journeys are to inspire and generate a sense of possibility against all odds. Heroes are present in many forms from mythical figures to a member of one's community. The importance of the hero is one of activating the imagination to push the boundaries beyond the odds placed before them. This narrative can be seen as an instrument to enable a person to transform and transcend their present contextual political reality to a future that can be inclusive of the seemingly impossible. Joseph Campbell once said that 'the adventure of the hero is the adventure of being alive'. It is in this spirit that the graphic narrative series hopes to instil among the Khoi-San youth through the telling of heroic tales of Khoi-San youth and grounded in their history, myths and culture.

The graphic narrative series seeks to capture the hero's journeys of four young people from the Cape Flats. The narratives weave together Khoi-San stories, myths, traditions, history and contemporary social, political and economic reality. The Heroes Project narratives seek to use heroic, culturally rooted stories as a way of offering possibilities to negotiate the present day challenges being faced by the Khoi-San youth. The graphic narratives also offer a medium, among many, to revitalise the importance of their myths and legends among the youth with the objective that this revitalisation will give the youth an avenue to understand their identity and history.



Figure 4: Pages from the graphic narrative (2014)

During the first half of 2014, the Origin Story was developed, and will soon seek community consent. Once approved, it will be launched in late September at the District Six Museum, Cape Town, South Africa. Residents of District Six, an inner-city neighborhood, were forcibly removed during apartheid, making this venue for the launch ideal to initiate cultural revival. The hope is to later disseminate in the Cape Flats, and catalyze new collaborations with local South African artists and designers, performers and illustrators, to develop the next phase of activities, thus taking collective ownership of reviving community spirit and enabling imaginations to see new opportunities.

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“Afrofuturism” is an emergent literary and cultural aesthetic that combines elements of science fiction, historical fiction, fantasy, Afrocentricity, and magic realism with non-Western cosmologies in order to critique not only the present-day dilemmas of people of colour, but also to revise, interrogate, and re-examine the historical events of the past.’ (2013) Quoted from Wikipedia at: <http://en.wikipedia.org/wiki/Afrofuturism>

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Image Reference List

Figure 1. *The Hero's Journey Monomyth* [Poster] At: <http://blog.mugglenet.com/wp-content/uploads/2014/04/heros-journey-cycle1.png> (Accessed on 07.07.2014)

Figure 2. Orderson, Kurt (2013) *Shadow puppetry at the Heroes Workshop* [Photograph] At: <http://4.bp.blogspot.com/-P7fIEBSqaUw/Uos61--nWeI/AAAAAAAAAnI/JjBx4dkC52I/s1600/vlcsnap-2013-11-04-17h17m54s80.png> (Accessed on 07.07.2014)

Figure 3. Choudhury, Abhishek (2013) *Final illustrations of the characters* [Illustration]

Figure 4. Choudhury, Tewari (2014) *Pages from the graphic narrative* [Illustration]

DESIGN DEMOCRATISATION AND ITS UNDERSTANDINGS THROUGH THE MEANING OF THE WORD “DESIGN” IN PORTUGUESE COLONISED COUNTRIES

Carla Amaral

Queensland University of Technology

Manuela Taboada

Queensland University of Technology

Marianella Chamorro-Koc

Queensland University of Technology

Abstract

This paper explores the literature and analyses the different uses and understandings of the word “design” in Portuguese colonised countries, using Brazil as the main example. It investigates the relationship between the linguistic existence of terms to define and describe “design” as an activity and field, and the roles and perceptions of Design by the general society. It also addresses the effects that the lack of a proper translation causes on the local community from a cultural point of view. The current perception of Design in Portuguese colonies is associated to two main aspects: linguistic and historical. Both of them differentiate the countries taken into consideration from other countries that have a different background. The changes associated to the meaning of “design” throughout the years, caused a great impact on the perceptions that people have about Design. On the other hand, the development of Design has also influenced the changes on the meaning of the term, as a result of the legacy from the colonisation period and also as a characteristic of the Portuguese language. Design has developed and reached a level of excellence in Portuguese colonised countries that competes with the most traditional Design cultures in the world. However, this level of Design is enmeshed into an elite belonging to universities and specialised markets, therefore Design is not democratised. The ultimate aim of this study is to promote discussions on how to make the discourse surrounding this area more accessible to people from non-English speaking countries that do not have the word “design” in their local language.

Keywords: *Etymology of Design, democratisation, colonisation.*

Introduction

Designers have a social responsibility that goes beyond the creation of desirable products, places and brands. Through creating new artefacts, designers interfere directly on consumption patterns, desires, social and individual identities and consequently have a strong influence in the construction of culture and social meaning.

However Design and designers do not operate in a vacuum. The activity and its actors are part of cultures and societies that have evolved for centuries around and with the Design field itself. The

relationship between Design, peoples and cultures is so intertwined that most of the times it is hard to see any distinction between them. Some contemporary authors even claim that Design is what makes us human above all, the capacity to change nature in order to plan and produce artefacts that will satisfy human needs (Fry 2012; Gall 2013).

Therefore, it is possible to argue that Design has been present in most instances of human life and cultures, from the first hunting tools and cave drawings through to the sophistication of the iPhone. However, the association of the English word “design”—used as a standard worldwide—with the essentiality of its concept, is not perceived or understood in the same way across cultures in contemporary societies.

In Brazil, for example, a Portuguese-speaking country, the word “design” is borrowed from English, as the common words used for Design-related activities do not seem to fit the full contemporary meaning of the word “design” as it means in English. This does not mean that Design itself does not exist in Brazil in as deep a level as it exists in other English-speaking countries, but as the word is borrowed and “foreign”, the activity becomes associated with something that is “alien”, and as such, due to some cultural dispositions, it is seen as “better” or “higher” than other activities that can be described in the local language.

This contributes to a widening gap between social and aesthetic/functional roles of Design, culminating in the fact that products and services are sold as “containing” “design”: the word is understood more as an adjective rather than a noun or verb (as found in its original semantic functions in the English language). As a consequence “design” is elevated to a “higher” activity, that is not naturally recognised as part of everyday life, which outcomes are associated to luxury items, the higher classes and the elite, and something that is only worthy when made or inspired by external authors.

The purpose of this paper is to investigate the fact that Design can be acknowledged differently in different cultures; to question to which extent the use of the English word “design” in non-English speaking countries stimulates a sense of foreignness and exclusivity to the Design activity that happens in these countries. By reviewing various linguistic aspects related to the word “design” in English and in Portuguese, and by analysing some historical aspects that would have influenced the contemporary use of the word, the understanding of the activity, and its outcomes in English and Portuguese-speaking countries.

This study contributes to the field of Design by questioning the generalisation that Design is undertaken and understood in the same way by different cultures. By tracing an overview of cultural and historical aspects of how the legacy of colonisation contributed to the contemporary understandings of Design in English and Portuguese-colonised countries, it highlights the consequences of the use of a foreign word to describe such an essential human activity. Rather than offering answers, the following sections present linguistic and historical factors that helped form parts of the cultures we currently live in.

Colonisation, Miscegenation, Language and Design

The term “design” has been defined and re-defined across cultures and time. In English “design” can be a noun or a verb. As a noun it is used to refer to (1) the actual result of the activity: the plans or representations of an object / service before it is made; (2) the arrangement of the aesthetic and

functional characteristics of the product, or patterns; or (3) the broad field or area of work and investigation (Oxford Advanced Learner's Dictionary 2010:411). In this paper we will use "design" with a lower-case "d" to refer to the first and second meanings and Design with capital "D" to refer to the field of activity and study. According to Vilém Flusser (1999:17), the word "design" has currently attained a significance that is different from its etymological origin. Flusser (1999:17) states that the study of the evolution of "design" is not historical, but semantic, in the sense of the close relationship between the significance and the contemporary culture influencing the meaning. Even though a semantic study is taken into consideration, to this paper, the historical aspects involved on the spread of the Portuguese and English languages around the world are also relevant. Countries colonised by Portugal and England carry their legacies despite being currently "independent states". Therefore, to be able to understand the present-day meanings of "design" it is necessary to look back and consider the aspects involved in the history of English- and Portuguese- colonised countries, to evaluate its impact to the local culture and how it reflects on Design as a field.

The legacy of colonisation shapes languages, behaviours, politics, environments and cultures in the dominated countries. Ferguson (2004:xxiii) lists nine items as part of the legacy of the British colonisation that are considered the most important influences when the British governed over a country. Of these, **language, forms of land tenure**—which determine social structure—and the **cultural features** disseminated over the colonies, seem to be the most significant in shaping the understandings and developments of the Design field in the colonised countries. These influences will form the basis through which to compare the Portuguese and the British colonial legacy, and how each of these cultures shaped the countries that they colonised.

The Portuguese colonial legacy

"From the early fifteenth century onwards, Portuguese history is punctuated by the phenomenon of overseas expansion, which took the Portuguese to East Africa, India, China, Japan and South America" (Saraiva, Robertson, & Fons 2012:62). Brazil, Angola, Mozambique and Guinea-Bissau are examples of Portugal's colonies in South America and Africa. All of these colonies gained their independence later on, with Brazil in 1822 followed by Angola, Mozambique and Guinea-Bissau in 1975 (Kaufman, Juang, & Morrissette 2008).

"The Portuguese Empire established Portuguese as the language of colonies in Africa, India and South America." (Parkinson 2009:218). Portuguese is a language currently spoken by 200 million people among the Estates members of the *Comunidade dos Países de Língua Portuguesa* (CPLP – Community of Portuguese Language Countries)—Angola, Brazil, Mozambique, Cape Verde, East Timor, São Tomé-Príncipe, Guinea-Bissau and Portugal (CPLP, 2010; Parkinson 2009:218). Another aspect of the Portuguese colonisation process that needs to be considered was the occurrence of miscegenation: the result of inter-racial relationships between colonial settlers and native women (Telles 2007:46). While on the one hand the mixing of races had its benefits such as the fusion of cultural expressions and values, on the other hand it hides a history of imposition and forced relationships, and has been used as a way of watering-down the local culture, as traditionally it is the colonizer's values that end up being imposed as dominant.

The British colonial legacy

England had also started to build its empire during the eighteenth century, although during the sixteenth and the seventeenth century Britain's focus was on what could still be gained from the

Iberian empires. The British Empire grew as a product of a long period of colonisation, from the 1600 through to the First and Second World War, dealing with shifts of power and independency of colonies (Levine 2013). The Commonwealth represents an association of former state members of the British Empire and is now composed by 53 countries spanned around Africa, Asia, the Americas, Europe and the Pacific (The Commonwealth 2014). Similarly to the Portuguese empire, the internationalisation of the English language (Ferguson 2004) is one of the most influential British legacies. During the mid-twentieth century many of the newly independent states adopted English as an official or semi-official language. English is currently spoken by 1.5 billion people, about a quarter of the world's population¹ One of the consequences of that linguistic power is the adoption of English terms into other languages in situations where the local language is not conclusive enough to express certain concepts.

The British Empire was, however, different from the Portuguese in many ways. While the Portuguese was an exploratory, male dominant, military affair, the British colonisation was composed of whole families that were sent overseas to build new societies, and was based on the British regulations and forms of land tenure. This form of colonisation resulted on the non-miscegenation of the British, and on the marginalisation of the native peoples (Ferguson 2004:113). The British families sent overseas preserved and disseminated their cultural values and the new generations followed the same path, resulting on a strong bond between Britain and their colonies, making the British culture prevail as the singular dominant culture.

Both colonisers, England and Portugal, implemented new habits, traditions, laws, values and other concepts that still play-out in their colonies, despite their independence. The points raised regarding their legacy can help reveal that the current status of Design in Portuguese and British colonised countries, reflecting the consequences of the colonisation process. Language is a strong pillar of the construction of the knowledge of why Design is still non-democratised in Portuguese speaking countries in Africa and South America.

What you say is what you are

The use of the word “design” in English dates back from the late 1500's. According to Melo Filho (2009:308) the Oxford Dictionary registered the word in its 1588 edition and it was defined as “a plan or draft conceived by men to represent an object before it is made”. Most authors agree that the word “design” derives from the Latin word “*designare*” —to attribute a sign, a mark to something, “to designate”. From the 15th century the term could be understood in two senses: a narrow sense, referring to the act of creating a mark, or a drawing to represent something (a sign), and a broad sense, referring to the creative mind of the artist/designer (Chuko & Ping-Yu 2007:2).

The direct translation of the Latin term “*designare*” to the Portuguese language would be the word “*desígnio*”, which in Portuguese also means “intent, intention, plan, project, purpose”. However, this Portuguese word was never associated with the Design practice or any activity related to it. Instead, “design” was most commonly translated into “*desenho*” (“drawing”), a word that already existed in Portuguese. “*Desenho*”, refers solely to the “narrow sense” of the term “design”. Therefore, the word “design” was appropriated from the English language into the Portuguese consciousness to describe the combined meaning of: intent, project, planning, designation and conception (Melo Filho 2009:307).

In Brazil, the English word “design” first appeared in the Aurélio Dictionary in 1986, with a broader definition that is equivalent to the current definition of “design” in the Oxford Dictionary. This definition

is, however, still restricted to the field of Design knowledge and professional practice (Melo Filho 2009:308). The implication of this is that “design” is seen as a specific activity restricted to the few trained people in the trade, rather than as a common process that all modern man-made objects and services must go through. This reflects the core issue this paper deals with: Design, in countries where the word needs to be borrowed from another language (usually English) becomes restricted to certain aspects of social understanding, and in turn its application in everyday life is distorted by the implications that a foreign concept carries into the language.

The issues of the definition of “design” and the spectrum of its use in society might seem trivial to the native English speaker, however words and their meanings have a core role in defining culture. Words acquired from one language into the corpus of another, can be incorporated naturally and change its spelling to suit the set of sounds available in each “host” language—which is the case of many technology related words lately, or even sports related words in the past. Or these appropriated words can be inserted into the society via more formal means, such as literature or education, in which case the word takes place in more specific realms, connoting more “elitist” values, taking longer for its true meaning to be absorbed by the broader society. This is the case of the word “design”, in the Portuguese language.

In countries where the understanding of the word “design” is not naturally interwoven into everyday life, the activity and outcomes of Design efforts are associated to luxury items, the higher classes and the elite, enhancing the existing segregation. On the one side, Design is seen as an elite activity, but on the other side, the word “design” starts being used as a “value aggregator” for any sort of product. Bonsiepe (2007:25) describes this phenomenon saying that, the word has become a commonplace term, it is not connected to the action of projecting anymore and it has gained an “autonomous existence”. It takes the property of adjective, rather than being the process by which something is planned and created. Bonsiepe (2006:28) states that Design today, in certain contexts, has moved away from its broad definition of “intelligent problem solving”, and been transformed into an aesthetic feature of “boutique” products. “For this reason, design today often is identified with expensive, exquisite, not particularly practical, funny, and formally pushed, colourful objects” (Bonsiepe 2006:28).

Furthermore, Bonsiepe (2006:27) says that if the social history is taken into consideration when related to the meaning of “design”, it is possible to identify two different ways that the popularisation of the term happened. One is a horizontal extension and the other a vertical reduction. In other words, “design” can be utilised by a great range of people in different disciplines and industries in a way it becomes a popular word, or it can be related to a small privileged number of people that “obtain” the power of Design.

Looking inwards

The changes associated to the meaning of “design” throughout the years, its relationships of power combined with colonisation and linguistic processes, as well as with the formal introduction of Design courses in colonised countries based on European models, cause a great impact on the perceptions that people have about Design (Borges 2011; Erlhoff & Marshall 2008; Rodgers & Milton 2011; Slack 2006).

However, across former Portuguese colonies, and other countries whose similar colonial background has conditioned the way people understand “design” nowadays, there are significant efforts in

practising and teaching Design in a way that is respectful of and based on the traditional local cultures. Mafundikwa (2013) stated:

Africa has had a long tradition of Design, a well-defined Design sensibility. But the problem in Africa is that, especially today, designers in Africa struggle with all forms of Design because they are more ups to look outward for influence and inspiration. The creative spirits in Africa, the creative tradition is as important as if as always if only designers could look within.

An interesting African exemplar illustrating how this can be addressed is presented in a study that employed a postcolonial socio cultural framework of analysis to decode cultural factors of indigenous products designed and manufactured in Botswana. The study was motivated by a need to conduct research that could assist designers attempting to encode socio-cultural factors in their Design practices, leading to more innovative, culturally-sensitive, environmentally-sound, cherishable, and user-friendly products in Botswana (Moalosi, Popovic & Hickling-Hudson 2007).

Through the discussion in this paper, it is possible to state that there are numerous barriers to be crossed in order for Design to become a fully democratic and de-colonised activity, that is connected to the essence of its original definitions and that genuinely empowers local communities fostering cultural confidence and positive bottom up social change. Firstly, language barriers need to be addressed on the adoption and use of the term “design”. Secondly, cultural barriers relating to the attitude that “design from outside is better”. The final and most challenging barrier is to understand that there might not be one single shared global understanding of what Design means. Instead, there might be multiple ways of understanding, thinking and making Design that are more suitable to each situation and culture.

The intention of this discussion is to raise questions in relation to the use of the word “design” in non-English speaking countries, and the impacts of its “imported” meanings into various local understandings, education and production of Design. Further research is needed in order to better understand how the term “design” developed across other colonised countries, as well as how Design was addressed in the local (pre-colonisation) languages, in an effort to develop comparisons to fuel more innovative design thinking based on local Design knowledge.

It is time to look within and recognise the values and traditions from local culture. As Mafundikwa (2013) states, designers have been looking outward for long enough and what they are looking for has been right there within grasp.

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Endnotes

¹ This number includes people that are fluent or competent in English, not only native speakers (Crystal, 2003:06).

BEYOND THE ARTIFACT; DEVELOPING STUDENT AWARENESS OF CONTEXTUAL SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

Katherine Bissett - Johnson

Swinburne University of Technology

Abstract

There are societal demands for new types of emergent design practice to solve complex problems of social and environmental sustainability. Contemporary understandings of sustainable Product Design require a shift from a focus on the artifact alone as the answer to issues of environmental and social sustainability. This means the context of the artifact from cradle to grave, its intersection with social and economic factors, can no longer be treated as separate from the materiality of the artifact itself. Generally Product Design curricula have only evaluated the social and sustainable impacts of a product in the final stage of the project. There is therefore a requirement for new Design curricula where student designers develop a contextualized understanding of the social and environmental system in which the product might exist. This paper presents innovative studio curricula comprised of learning activities based on a toolbox of design methods tools inspired by Human Centred Design (HCD), Design for Environment (DfE) and Social Impact (SI) approaches. Development of these tools into learning activities has moved the curricula beyond just the use of Human Centred Design (HCD) techniques. This work is significant because it broadens students' understanding of the design process and makes them aware of the critical need to see a holistic design solution. Using these tools brings social and sustainable design decision-making into all phases of the Design Process. Further, this paper argues that situating the projects in international locations broadens students' understanding of the importance of specific contextual influences.

Keywords: *Socially Responsible Design, Industrial Design, Sustainable Design, Design Tools, Curriculum*

Introduction

There are societal demands for new types of emergent design practice to solve the complex problems of social and environmental sustainability. These have led to a shift away from focus on the artifact alone to a focus on the socio-technological context of the artifact from cradle to grave. Product Design curricula generally only evaluate the social and sustainable impacts of a product in the final stage of the design project. Student designers now need to develop a contextualized understanding of the social and environmental system in which the product might exist.

This paper presents the basis of several innovative studio curricula that address this need for contextual understanding of product design. Inspired by Human Centred Design (HCD), Design for Environment (DfE) and Social Impact (SI) approaches, these curricula comprised of a series of learning activities based on a toolbox of design methods developed for both undergraduate and post graduate university courses in Industrial Design (ID) and Product Design Engineering (PDE).

The paper presents examples of student projects from Swinburne University of Technology undertaken with real world partners in Uganda, Indonesia, Sudan, Laos and the Northern Indian State of Gujarat to highlight the way specific tools were used and adapted to work as learning activities. Projects tackled problems of poverty, education, health, water, sanitation, energy and agriculture to name a few. The curricula have generated solutions unique to the local cultures, skills, economy and locally available materials of individual countries. The projects were intentionally situated remotely; design methods tools were then used to understand this unfamiliar context.

Development of the tools into learning activities has moved the curricula beyond just the use of Human Centred Design (HCD) techniques. A scaffolded series of tasks work with the different phases of a specific model of the Design process (refer to Diagram 1 and 2) to reinforce the systems and contextual nature of product design. This work is significant because it broadens students' understanding of the whole design process and makes them aware of the critical need to see a holistic design solution and not simply a material artifact. This has brought social and sustainable design decision-making into all phases of project and student designers have developed a better understanding of the artifact in context, in addition to learning how to use the tools. Further, situating the projects in international locations has broadened students' understanding of the importance of specific contextual influences.

New Design practice requires new Design curricula

Design practice is contextual. Based on the convergence of several social and technological factors, industrial products and services are the result of a socio-technical process (Morelli 2006). To address this socio-technological framing a new design practice has been developed, *Design for Purpose*, which is centred around people's needs or societal problems (Saunders & Stappers 2008). These types of societal problems are contextual, open ended and require different tools and thus different approaches to problem solving.

Morelli (Morelli 2006:1497) notes that adequate tools exist for product development, but these do not take into account contextual factors such as those that apply to service design. Further, Morelli argues that design has no methodology to operate where artifacts are arranged in a systemic manner, such as in service design. This argument can also be made for the complex systemic area of Socially Responsible and Sustainable Design. For both design practice and design education, new Design methods and Tools need to be learnt, which require new curricula: "New Curricula will be required not only for those designing but also those supporting the creativity of others" (Sanders & Stappers 2008:16). This paper presents new curricula to teach these new methods and tools alongside the traditional skills, knowledge and attitudes.

Methods - tools as learning activities

Historically the curricula at Swinburne consisted of design methods based on industry-derived processes adapted for student learning. These focused on the resolution of the product alone, and any learning activities were directed to this end. The new emergent practice requires new curricula and new tools. In the new curricula different tools were selected, adapted or revised to align with the various phases of project, with the particular objective of enhancing the students' thinking about contextual issues, specifically Social Responsibility and Sustainability. This approach has proved successful in service design practice, as outlined by Meroni and Sangiorgi (2011).

Similarly, the tools were used to move projects from a broad understanding of the problem to a specific solution. The tools were converted to learning activities to provide structure to the design experience and externalise thinking (Green & Bonollo 2002:50). Further, these activities allowed documentation of the process and results (Dinham 1991:11) as assessable outcomes. This series of learning activities generated active curricula that scaffolded students' learning (Biggs 1999) for specific learning outcomes. All the curricula employed a problem setting approach, which is a form of problem based learning that leads to deep learning (Sivan 2000). The following section explains this in practice.

Types of learning activities aligned with a specific model of the Design process

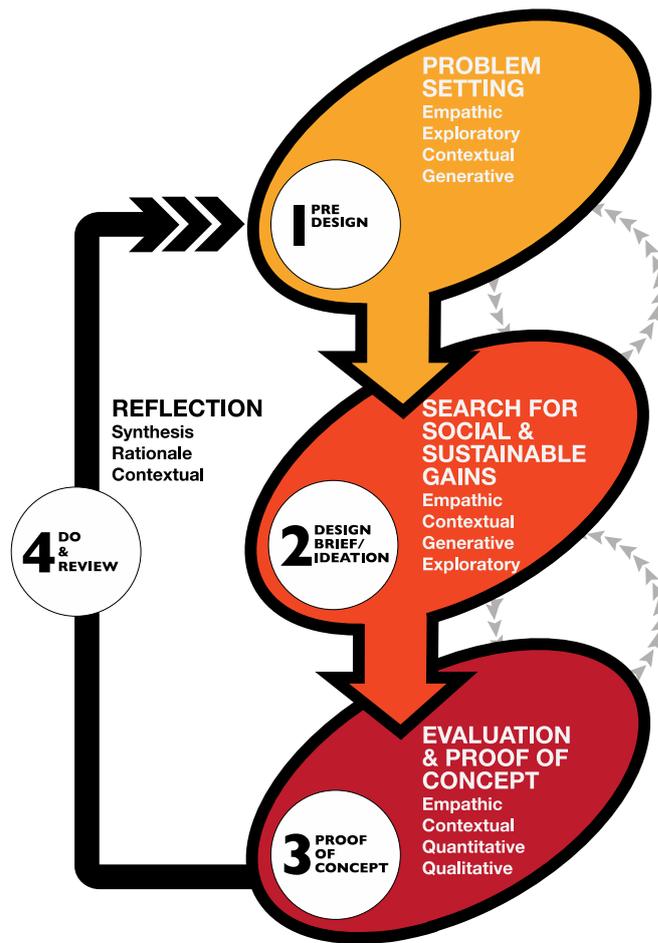
A specific model of the Design process used as the basis of the curricula presented in this paper is shown in Diagram 1, there are 4 identifiable phases as follows:

Stage 1 Pre Design; this is the problem setting phase of the project where the preliminary research was undertaken into a locale, users and makers. The tools were generally Empathic (Steen 2011:45-60), Exploratory, Contextual and Generative. Large cohorts, limited budgets and limited class contact time meant that true participatory practice was not possible given the projects' distant settings. Locating the projects in unfamiliar cultures and places reinforced the objective of the curricula; to teach students how to use the tools to better understand the context for the artifact they are designing. Hence the learning activities pushed the generative research in a speculative direction with a Human Centred Design (HCD) focus.

Stage 2 Design Brief and Ideation; in this phase the primary activities were searching for social and sustainable gains and determining how these sat beside product design criteria. This information was overlaid with a design brief and the development of design concepts. There are many more DfE tools than Social Impact mapping tools, however social awareness was developed through the adaption of the Context Mapping tool (Visser, Stappers & Van Der Lugt 2005) to include cultural, ethical, environmental and physical contexts. The tools were generally Empathic (Steen 2011;45-60), Contextual, Exploratory and Generative.

Stage 3 Evaluation and Proof of concept; in this phase design concepts were refined and verified through prototyping and big picture aspects such as Social Impact and Business propositions linking maker and user were defined. There are many quantitative tools available to propose sustainable gains, such as Limited Life Cycle Analysis (LCA). A Social Impact Map was developed by the author which speculated on the social impact of the artifact from cradle to grave on three levels, individual, community and global. The Business Model Canvas was used to generate contextual understanding of the stakeholders involved in taking the artifact from cradle to grave. The Tools used were Empathic (Steen 2011;45-60) Contextual, Qualitative and Quantitative.

Stage 4 Do and Review; this is the reflective phase of the Design process model where students define what they did in the project and what it meant. Reflection is imperative in an experiential learning (Kolb 1984) scenario. Guided written reflections were used successfully to reveal the students understanding of the application of the tools in addition to developing a critique of their final solution. To describe the interrelationships between artifact and context, the visual Concept Mapping (Novak 2006:175-184) tool was used, resulting in visual representations of the students' understanding of the project.



Types of Learning Activities aligned with a specific model of the Design Process

Diagram 1 Types of Learning Activities aligned with a specific model of the Design Process 2014.

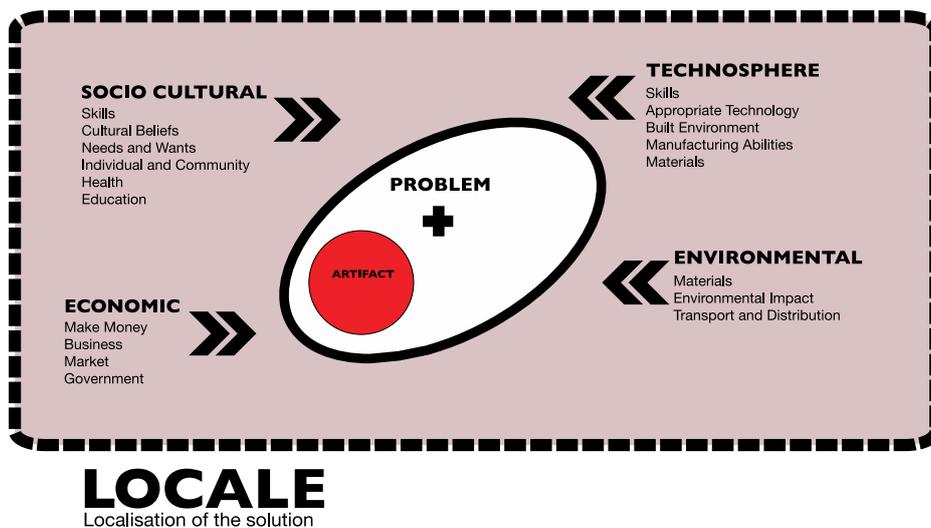
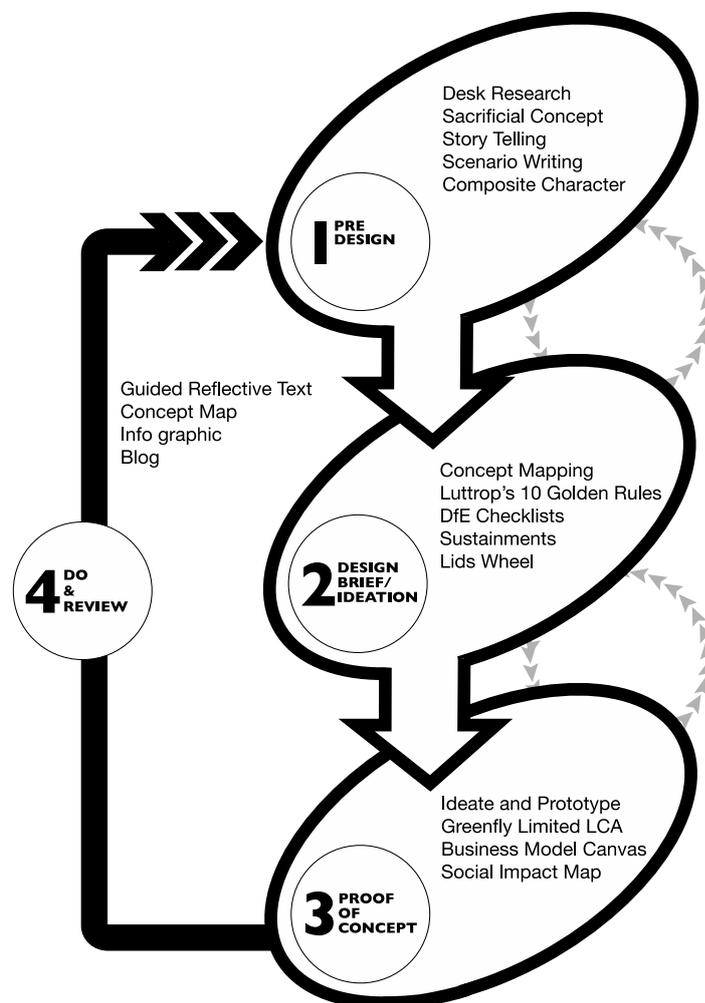


Diagram 2: The Localization of the context and influences on the Problem and Artifact.

Many of the tools used are well documented and readily available. However when used as the basis for learning activities their selection and inclusion in curricula must be carefully considered. Students must be able to understand why they are undertaking a particular activity and where it will lead them in the development and resolution of their project. One important objective of the curricula was to contextualise the artifact, through an understanding of the systemic nature of artifacts. The tools were also an important catalyst for the experiential learning cycle of “do and review” (Schön 1983) encouraging an iterative approach to developing a solution. They were used by the students to understand the impacts of the locale on the solution as shown in diagram 2.

Discussion - Tools adapted and developed to be learning activities

This section will discuss the tools as learning activities by providing some examples. Diagram 3 outlines the tools that were selected for the curricula and how they fit within a specific model of the design process as learning activities.



Learning Activities aligned with a specific model of the Design Process

Diagram 3 Tools as Learning Activities aligned with a specific model of the Design Process.

Example 1: Adapted tools - Facebook and the Sacrificial Concept Tool

Engineering Students embarked on a project with Sangam Australia India design platform (Sangam Project 2014) which aligned Australian Designers with Indian Artisans as means to sustain craft practice in India. Real co-creation or co-design with artisans in India was impossible with a large number of students. However Sangam had a large Facebook group comprised of artisans, designers, educators and business people in India. This seemed an untapped resource but accessing it raised the question of how to engage students in an ethical way with this online group. Students used the Sacrificial concept tool (IDEO Human Centred Design Tool Kit 2nd Edition:60) to develop content for a posting on the Sangam Facebook page as a way to access additional information from potential users about a design idea by posing ideas as questions about preferences rather than yes or no answers. The facebook feedback was often not what the students expected and sometimes it pushed their project in new or unexpected directions. Students learnt from this experience that the real world users have a very different perspective and this should be respected. They were also able to elicit information about the problem that otherwise might never have been apparent.

Sacrificial Concepts

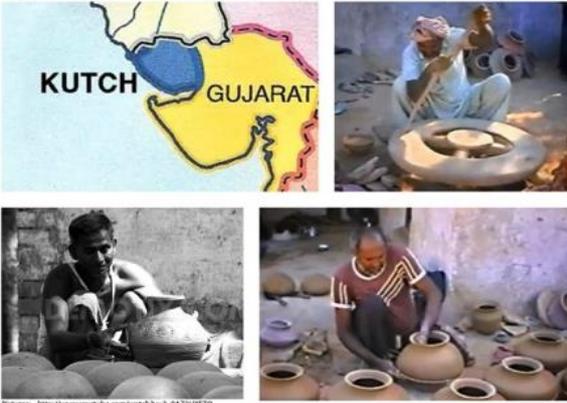
<p>Concept 1:</p> <p>Currently potters are setting their pots by burning wood, straw or other materials to create heat. It is a timely labour and time intensive process.</p> <p>I intend to look at other possible ways of more efficiently conducting this process or by:</p> <p>Including the use of renewable energy to help create the needed heat for the process. Or Creating a reusable kiln they can make themselves</p>  <p><small>Pictures: http://www.shutterstock.com/pic-106112267/stock-photo-ortosa-india-nove-potter-bulbs-in-outdoor-kiln-for-clay-pots-on-nove-in-ortosa.html, http://www.demotix.com/news/20051203/pottery-legacy-slowly-proceeding-towards-end-india#media-2055413, http://www.youtube.com/watch?v=3_8A730E1TQ</small></p>	<p>Concept 2:</p> <p>As pottery is a craft that is currently in decline, potters may need to find new ways to sell their products.</p> <p>I intend to look at helping the existing Artisans that are disconnected in rural areas, to be in contact with international buyers.</p> <p>This would be using a self sustainable system on an international scale, but may begin with:</p> <p>Help create a renewable power source Or Find ways of communication from rural areas to international locations Or Suggest new products made using their skills and resources that can be sold locally</p>  <p><small>Pictures: http://www.youtube.com/watch?v=3_8A730E1TQ, http://www.demotix.com/news/20051203/pottery-legacy-slowly-proceeding-towards-end-india#media-2055430</small></p>
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Figure 1 Extract from Sangam Project Facebook Site 2012, original question and Sacrificial Concept posted by Joanna Wilson, Product Design Engineering, Year 3. The student originally posted a sacrificial concept idea around either designing a new kiln or finding a renewable energy source or finding new markets for pottery or developing new product ideas to connect artisans to international markets. The Facebook response was that artisans were very happy using cow dung for fuel; with their existing kilns it was cheap and readily available. The real problem was getting their products to their market, not the products themselves. This student then developed a range of tea cups, based on the Indian Chai Waller that could be purchased direct from artisans during a tourist's visit, complete with appropriate packaging and information about the maker of the tea cup.

Example 2: Ideate and prototype tool

Several curricula at undergraduate and post graduate levels with international clients used the Ideate and Prototype tool adapted from Stanford's Design Bootcamp (D-School Bootcamp 2014). Students prototyped their design very early in the design process and used the prototype to verify their design concept. The activity required 3 prototypes (or testing of part of a prototype) and 3 sets of sketches as an iterative loop.

Students used the same techniques and materials that their end users or makers would use in their home country. In response to this constraint, great empathy and understanding of the real world aspects of the making and using the product developed. Designs were quickly refined and made simpler, material strengths and weaknesses were identified immediately and the limitations of tools for and techniques for making artifacts recognised. The whole class provided speculative users who could test, review and critique the prototypes. A reflective dialogue developed not just between staff and students but amongst the students, resulting in stronger project outcomes.

All of these students were previously very comfortable working with CAD but were quite challenged by a) working with their hands very early in the project, b) the problem solving process using physical prototyping rather than computers and c) the iterative nature of the activity.

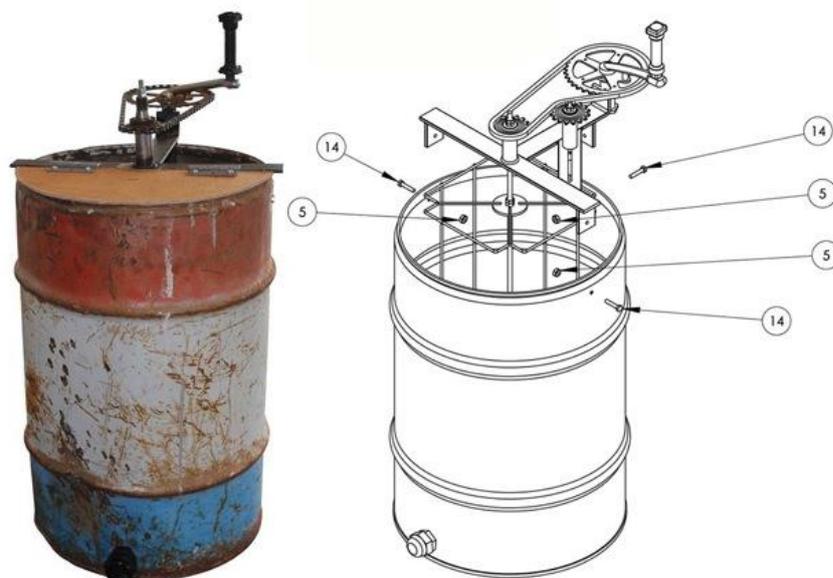


Figure 2 Example (a) is a honey extractor prototype and a Cad drawing of the design concept, designed for UGANDA by Fraser Pyke Product Design Engineering, Year 3. This solution was derived from the problem of food security in Uganda. The student identified that honey was a good source of nutrition for the Ugandan Government sponsored farmers with bee hives, but in extracting the honey the farmers destroyed the hives. Taking a western technology for honey extraction, the student produced a hand powered centrifuge using materials and techniques that would be readily available in Uganda. Making and testing a prototype using the same (or as close as possible) materials and processes as those found in Uganda raised awareness of the issues confronting the 'real world' maker and user of the product.



Figure 3 Example (b) Testing the DIY facemask for Indian Artisans 2011, by Lucas Chan, year 3 Product Design Engineering. This concept was inspired by two key ideas, the fact that India is one of the largest recyclers of plastic bottles in the world and secondly that Artisans are skilled at making things. The face mask is a low cost solution made from readily available material, plastic bottles, cotton fabric, elastic bands and rubber gloves that can offer significant health benefits to wood workers by providing a particle filtering face mask. This concept went through several iterations of Ideate and Prototype until a working prototype was resolved.

Example 3: Business Model Canvas tool

Masters of Industrial Design students undertook a project with an organisation in the Gujarat Region of India committed to the education of embroidery artisans. Ideas and concepts were exchanged via email. Prototypes that made in Melbourne Australia were sent to Gujarat for interpretation by Artisans and subsequently their embroidered pieces were returned to Melbourne Australia. One of the problems confronting artisan production in India was in getting products to consumers. By Adapting the Business Model Canvas (Osterwalder & Pigneur: 2009) the concept of value creation for all stakeholders was introduced. This tool encouraged the development of service proposals (Product Service System or PSS) that could work in conjunction with the product concept. This shifted the project focus from the artefact alone to the development of business propositions appropriate for international markets.

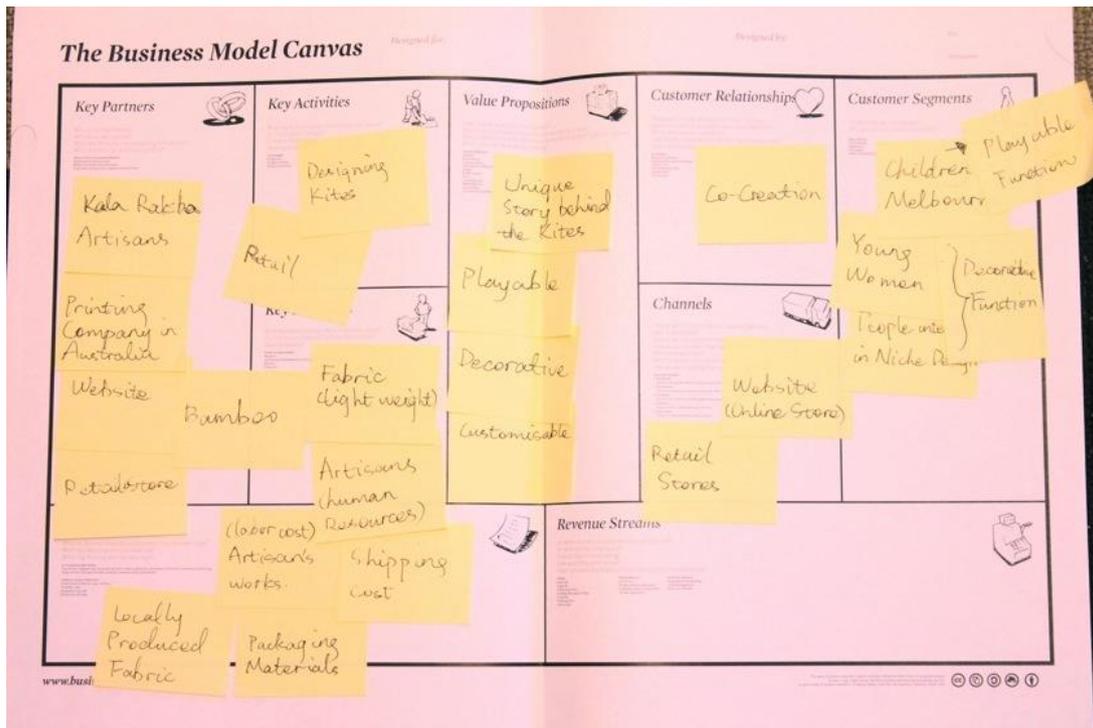


Figure 4 Draft version of using the Business Model Canvas template (Osterwalder & Pigneur: 2009) by Grace Ge Song 2013, Masters of Design Student for a kite to be ordered via E-commerce made in Gujarat and sold in Melbourne.

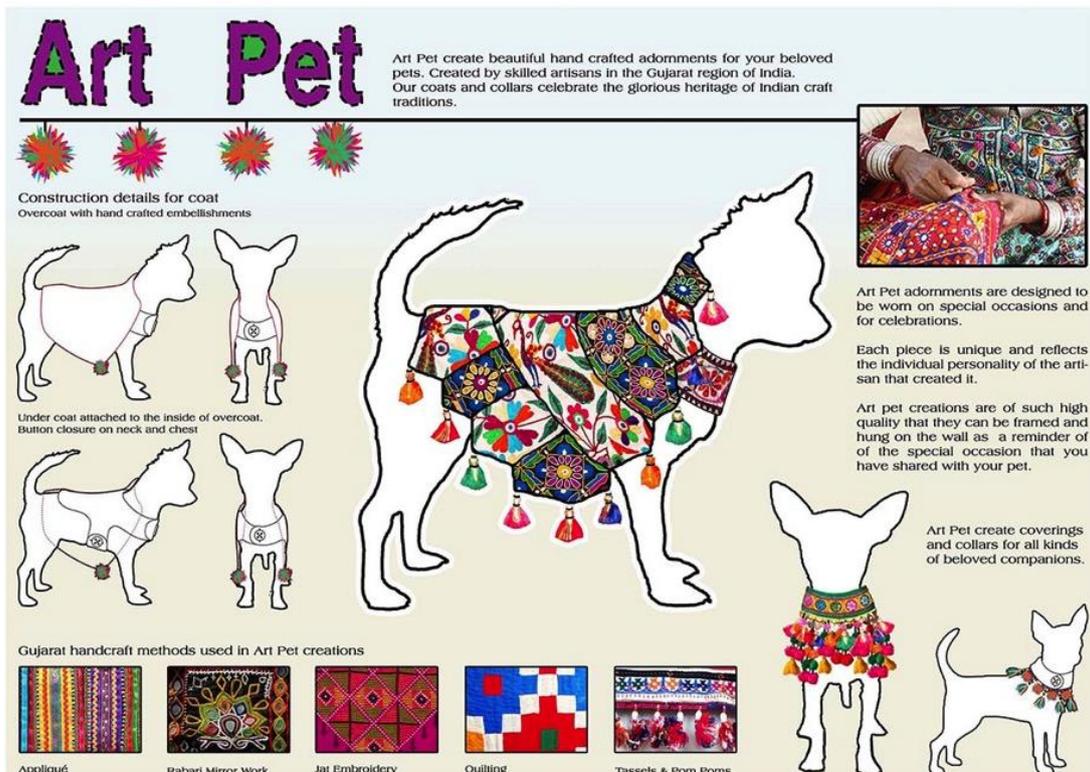


Figure 5 Art Pet Coat Concept Page by Shelly Perry, Masters of Design. This concept involved the production of a celebration coat for a pet that could be custom embroidered in India for each customer in Australia. When the idea of a dog coat was first presented to the artisans in India it was met with some merriment, as dogs in India are not generally lavished with the same comforts that they are in Australia.

However by developing several business propositions around the product, its credentials were firmly established. Aspects such as an online ordering system that attributed the embroidered elements to a specific artisan, the engagement of a photographer to document the event where the dog wore the coat and a framing service that would frame the pet coat and photo post event, added value to the proposal.

Example 4 New Tool: Social Impact Map and Concept Map as Reflective Tools

The Social impact Map tool was developed by the author to allow speculation on the social impact of a proposal by critiquing the artifact and the business model. The students mapped the social impact on 3 scales, individual, local community and global. Visual Concept Mapping (Novak 2006:175-184) was used to describe the interrelationships between artifact and context in a visual way and as a reflective tool.

Social Impact Map

(where 1 is low impact and 6 is high impact)
© Kate Bissett Johnson 2013

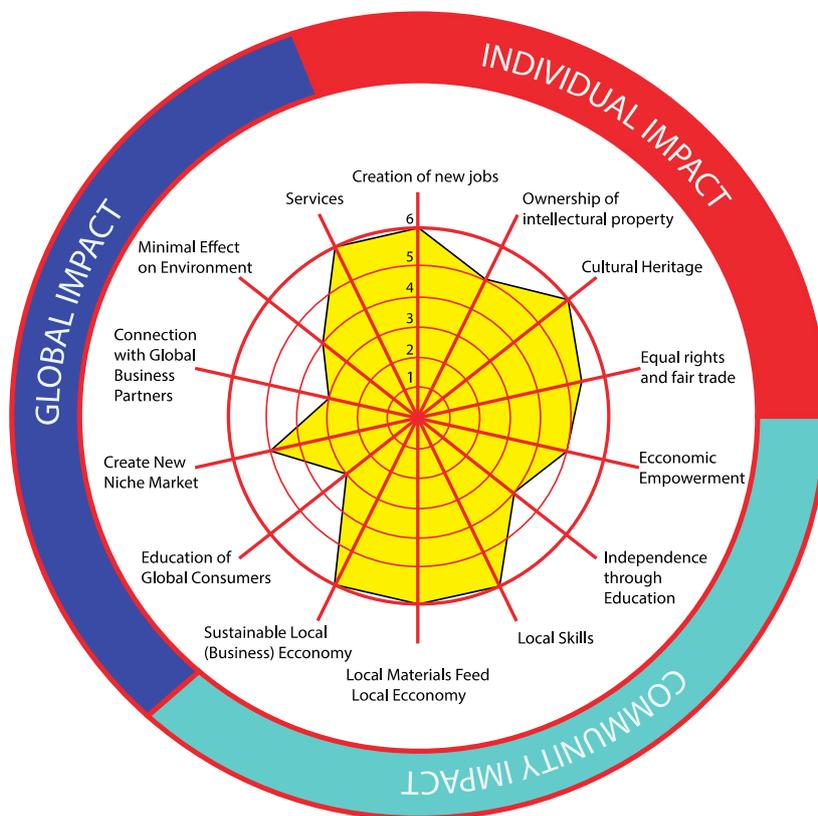


Figure 6 Social Impact Mapping Tool developed by the author (Bissett Johnson 2013) for use by Masters Students for a Co-Design Project undertaken with Artisans in the Gujarat region of India.

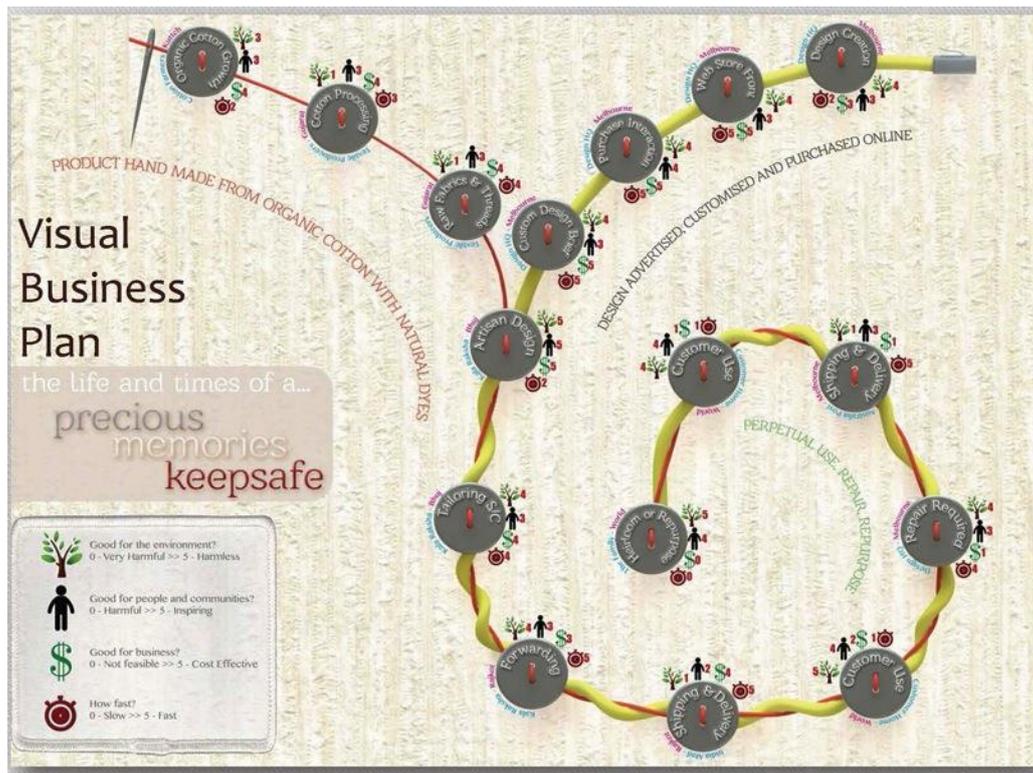


Figure 7 Concept Map developed by David Moorhead 2013, Masters of Design student. Each 'button' represents a link in a textile product's life from cradle to grave. Each 'button' is ranked according to 'good for people, good for the environment, good for business and how fast?' The two strands of cotton represent the intertwining of local artisan production on the left and e-commerce on the right delivering the final product to the user.

Conclusion

All the projects developed for these studio curricula were with real world clients in international settings. Large cohorts, limited budgets and limited class contact time meant that real face to face or participatory practice was not possible. Location of the projects in unfamiliar cultures and places reinforced the objective of the curricula; to teach students how to apply the tools to better understand the context of the artifact they were designing. These projects are intentionally situated remotely to reinforce the use of the tools as a means to understanding of an unfamiliar context. The tools could equally be applied to the students' local Australian context. Therefore understanding the localization of aspects such as context, skills, culture, religious beliefs, materials, geography and weather for the locale in which the project was located were imperative to the project success. This reinforced the concept that all design is contextual, and a solution that works in one place may not be suitable for another. Thus making the design proposals context specific required the use of several different tools whilst the outcomes of these learning activities made the thinking of the students explicit and assessable.

Design for Social Responsibility is an emergent practice that demands new ways of thinking and new design approaches. A curricula that uses recognisable tools as learning activities exposes students to both the potential of the tools and the experience of their application. The tools generated an active learning approach (Sivan 2000) that combined with a specific model of the Design process to encourage an iterative approach to the project's resolution. This work is significant because it

broadened students' understanding of the whole design process and made them aware of the critical need to see a design solution as not simply a material artifact, but as a part of bigger system that is centred on the user, their local experience, culture and environment.

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EMPATHY AND CREATIVITY

Ashley Jane Booth

Bergen Academy of Art and Design

Linda Lien

Bergen Academy of Art and Design

Abstract

This paper will discuss the research project “Pictogram-me”. The focus is on research-based teaching and student workshops, and how a large degree of empathy can reduce creativity. It will discuss this in relation to human centred and inclusive design, approaches where people are included in the design process in different degrees and sometimes also take part in designing the end product (Papanek 1971:188, Eikhaug 2010:6). In Pictogram-me we aim to highlight the experiences of those who have a difficult daily life, a challenging existence. By the help of pictograms we wish to contribute to increased reflection on life’s complexity. By presenting pictograms in public spaces, and in an interactive website, the project wants to promote empathy for those of us who are “challenged”. Together with students we are exploring how we can collect personal stories for and from various groups of ‘challenged’ people. The collection of material for the research project is heavily based upon the involvement of Visual Communication Bachelor 3rd year students at Bergen Academy of Art and Design, and inspired by the methods of human centred and participatory design, as well as co-design (Fuad-Luke 2009:143, 147). Our preliminary conclusion is that the research workshop’s support for the student’s learning process is excellent, on most points, but a surprising experience was that our insight into the situation of the challenged groups made it most difficult for the students to work on the visual material. This reaction was the complete opposite of what methodological theory states. Working closely with users should lead to better understanding, better processes and improved design results. The great degree of empathy encouraged in this project seems to discourage the student’s creativity, and the designer’s social consciousness becomes a burden instead of inspirational insight.

Keywords: *Empathy, creativity, learning, methodology, user-involvement, human-centered design, pictograms*

Introduction

We can all feel underprivileged or have a difficult day, but we use “challenged” as a generic term for individuals or groups of individuals who, for longer periods of time, face challenges in life and society. There can be many different types of challenges, related to being unemployed, in poverty, a victim of crime, a prostitute, an immigrant, a drug addict, elderly, a sexual deviant, or having lifestyle complaints, physical or sensory disabilities or mentally challenged and so on. The Project’s focus is upon collecting stories from and for these groups of the “challenged”, and their representatives and support organizations, if they have one.

Discussions

Surprisingly, we have used lots of discussion time on terminology. The names 'disadvantaged' and 'underprivileged' have received mixed response, and some negative comments. It was definitely not our intention to be derogatory. We have experienced positive response from the disadvantaged's cooperative organisations, with one exception, a mental health organization refused to work with us, because they experienced that our project description was stigmatizing. We are now more aware to avoid terminology that can be seen as allusive.

The intention of the project is threefold: Development of methods, pictograms and an interactive tool

Methodology is the challenge we have addressed most thoroughly in the first years, and the main subject for this paper. Our professional question is: What methods can be used or developed to get in contact with the "challenged" to collect their personal stories? We are exploring how visual language can play an important role in creating dialogue (figure 1).



Figure 1: Exploring how visual language can play an important role in creating dialogue

The 'Pictogram-me' project is inspired by the Bergen Academy of Art and Design's interest in 'Social design', based upon social and participatory design thinking¹. Victor Papanek already in the 1970s stated the social responsibility of designers, and wrote in the legendary book *Design for the real world* that designers should "design for people's needs rather than their wants" (Papanek 1971:219). This field of design might have its roots in Action Research, which is a form for research involving the participants in defining and solving problems. One definition is a "systematic inquiry that is collective,

collaborative, self-reflective, critical and undertaken by participants in the inquiry" (McCutcheon and Jung 1990:148 in Masters 1995:2). Empowerment of participants is essential, and this is highly relevant in Pictogram-me. In the mid-1940s the American psychologist Kurt Lewin described action research as "proceeding in a spiral of steps, each of which is composed of planning, action and the evaluation of the result of action" (Lewin in Masters 1995:1). Lewin argued that to understand and change social conditions, you needed to include those who know and live with the conditions. The participants are often referred to as co-researchers (Bjørndal in Tiller 2004:129). Practitioners are also involved in the reflection on the work (Altricher 1999:3). This is related to how Thomas Lockwood describes a shift towards a more creative and more collaborative way of thinking in design (Lockwood 2010:ix).

First - methods and teaching

Together with students we are experimenting with how we can collect the stories for and from 'challenged' people, people who would see it as a challenge in itself to meet us maybe because of anxiety, shame, or mental and physical challenges. In a pictogram course for the 3rd Year BA students in Visual communication in 2010, where drug users were our 'focus', we experienced the challenge of working with people with varying 'daily health', who were most difficult to make appointments with and to facilitate workshops for, we had to go out and meet some of them in their milieu. Inspired by Action research and Human centred design, and with respect for the participant's insight and knowledge, we have started to test a variety of methods for collecting life stories (Dowling in Tiller 2014:236-240).

Secondly - pictograms

Pictograms are by definition simple characters that are designed to convey information effortlessly. We are surrounded by thousands of them each day - as the friendly couple on the doors of public toilets, on your smart phones and computers, weather maps and road signs, they are there to inform or warn, or sometimes just to adorn². The 'Pictogram-me' project aims to experiment and investigate whether pictograms, which are, normally, accepted as simple and not very flexible visual messages, if then they can express more complex social messages. In pictogram development our professional questions are: How can pictograms be used to express abstractions, differences in degree, nuances in definition and philosophical concepts (figure 2). The project is inspired by Isotype, a symbol system developed by Otto Neurath to explain and illustrate social and economic issues to the general public in the 1920's and of which is said to be the origin of modern pictograms. His vision was: "Words divide, pictures unite"³. Other reference projects are Jonathan Barnbrook and Marcus McCallion "Olympukes", 52 satirical pictograms, developed as a comment to commercialization of the Summer Olympics 2004⁴. And the Pussy Galore font, created in 1995 by the Women's Design and Research Unit; Teal Triggs, Liz McQuiston and Sian Cook⁵. Designed to help explore the roots of misconceptions about women propagated through contemporary vocabularies of Western culture. These examples suggest that pictograms will be able to express abstractions, nuances and philosophical concepts.

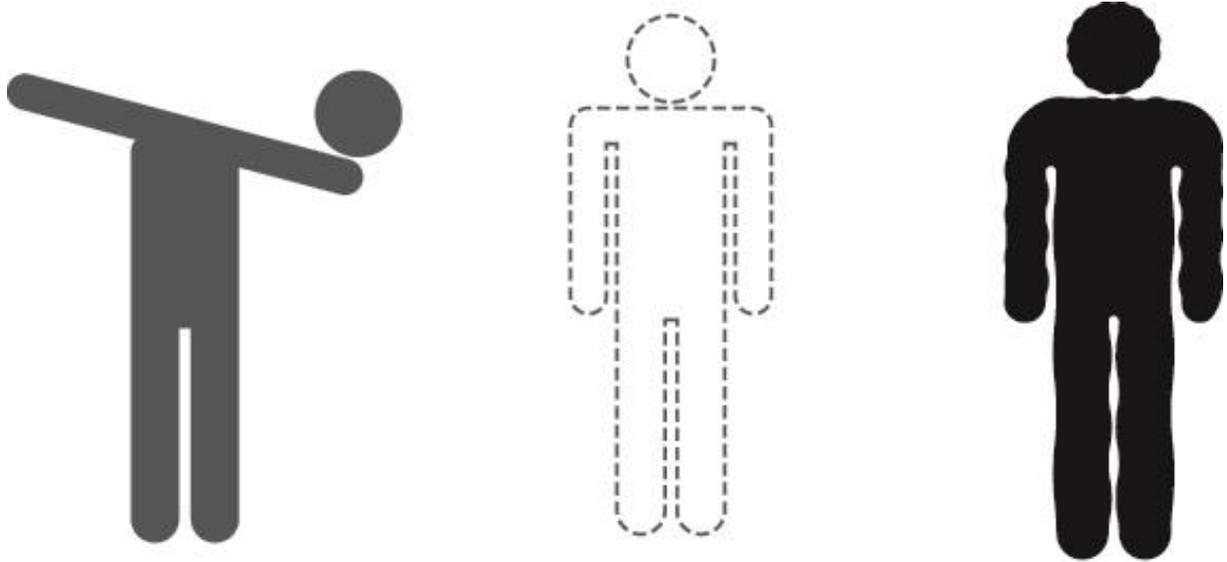


Figure 2: Using pictograms to express abstractions, differences in degree, nuances in definition and philosophical concepts

Thirdly – interaction and dissemination

The third intention is to develop an interactive communication, a web site, to appeal to as wide an audience as possible. Can interaction help create new associations or enable the user to assemble their own visual language within the site and/or uncover hidden messages?

Preconceptions

In the further develop we will test methods to create real dialogue and participation between designers and the 'challenged'. In an article published in the 1960s' Sherry Arnstein (1969:2) describes how citizens can be involved or excluded from development processes. In his ladder of citizen participation, Arnstein points at eight different degrees of involving, and relate this to power. The top level, citizen control, has much in common with co-design. Language is a powerful tool that might not be equally shared by the participants, thus by using visual communication, the aim is to give the challenged an alternative tool and more power to express themselves. "There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process" (Arnstein 1969:2). As we wish to focus the research value and the output quality of the project we should concentrate on fewer groups in the future.

Conclusion

First: Research ethics

The project has met ethical challenges, although our focus group are informed about the use of their information - their stories that they share with us. But, an example is a homeless drug-user who lived temporarily at a hospice in Bergen and gave us consent to take his picture. Just to present the photo publicly is difficult; it was no problem to obtain permission to document the meetings, but this is permission given by drugged, often ashamed people, who don't want their family to see them like this, and do not want their family to know where they are.

Pictograms content can be provocative or disturbing. One pictogram had to be refused from an exhibition, because drug users reported that this pictogram made them want drugs. We also learned from another exhibition in Bergen that it feels much more balanced to ask people to contribute in the project, when we are able to give something back, in this case invite them to feel welcome in our

exhibition space. By the help of post cards, poetry, dance and clay modelling we invited people to share personal challenges and stories. We presented a "Pictobooth" based on Kinect technology, encouraging people to make their own pictograms (figure 3). Participants were invited to an event where a professional dancer translated the descriptions of their experiences into body language. We understood that transformation by a third part gave us a much richer material to work on. It made a huge difference to use visuals and performance as an icebreaker to engage people. We were surprised how easy people shared their stories. In some cases it was difficult to end the conversation, which is a risk as we are not professional therapists.



Figure 3: Pictobooth

Secondly: Methods for visual dialogue

There exists a lot of literature about how to collect various data focusing upon individual stories, and for example sociologists have developed methods of how to direct "life story interviews" (Dowling in Tiller 2004:237-240, Wideberg in Album, Hansen and Widerberg 2010:220-225). The global design agency IDEO has developed a Human-Centred Design Toolkit and an online resource that addresses how to involve people from the initiation of a design project to its implementation⁶. Different public organizations and universities share their methods⁷. We can see that the students are so far limited in their explorations; they base their collection of data mostly on observation and interviews. But there are many possibilities to test and experiment with new methods based upon visualization. We believe that a use of the visual language will open up for better insight and conversations⁸. And it may not necessarily be small-scale tools, what would for example happen if we transform the surroundings, create shifts of scenery in rooms, or by the use of multimedia to stimulate senses?



Figure 4

Thirdly: Designing empathy – discouraging creativity?

Our preliminary conclusion from our courses is that they greatly support the student's learning process. But, a surprising experience was that our insight into the situation of the challenged groups, and the empathy created with and for them, made it most difficult for the students to work on the visual material. Our experience with the students was the complete opposite of what methodological theory states. For example, the Norwegian Design Council points out how an inclusive design approach is a source of inspiration and an opportunity for innovation (Eikhaug 2010:8).

"Inclusive design is set to become an important design movement in the 21st century, building on the increasing interest in it and social advancements of the last century. Involving end users within the design and development process is becoming a more successful and proven way of engaging consumers and is also driven by legislation" (Eikhaug 2010:6). Inclusive design and people-centred design processes are said to be effective as development processes, because users can play a leading role in defining issues and helping to focus direction, therefore there has been a shift from designing for users, to designing with users, where the user also becomes co-creator (Fuad-Luke 2009:143). As Alastair Fuad-Luke writes in *Design Activism* this shift has been paralleled with recent debate about the social dimensions of design. Participatory design has become mainstream and politically correct, and it appears that there is agreement on the ethical and practical advantages of participatory design approaches. But the great degree of empathy encouraged in the Pictogram-me project, instead, seemed to have a negative impact on the student's creativity and ability to find flow. Professor in psychology, Mihaly Csikszentmihalyi, has studied flow, and describes flow as a sense of effortless action (Csikszentmihalyi 1971:29). Such processes might lead to unexpected and high quality results. To be in flow means to lose the focus on "the others" and other people's expectations. Whereas a too greater degree of empathy and good intentions may lead the students to be too self-critical, and too judgemental towards the expected result during the process. The designer's social consciousness becomes a burden of social responsibility rather than inspirational insight. We have received feedback from designers that they recognise this conflict between involving users and finding flow, and this is an area that we find most interesting for further investigation.

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PRACTICES, CHALLENGES AND LESSONS LEARNED AT THE 2014 ICSID INTERDESIGN WORKSHOP IN MUMBAI: DRAWING PARALLELS WITH SOCIALLY RESPONSIBLE DESIGN EDUCATION

Sylvain Després

Carleton University

Thomas Garvey

Carleton University

Abstract

This paper presents the experiential account of design participants in the 2014 ICSID (International Council of Societies of Industrial Design) Interdesign workshop in Mumbai, India. The overarching theme of the workshop was entitled 'Humanising a Metropolis' and was hosted in partnership with ICSID and the Prin. L. N. Welingkar Institute of Management Development and Research (WeSchool). The workshop brought together designers from India and several other countries with varying design competencies to address some of the city's social and infrastructure challenges. The authors explore the role of socially responsible design education in the context of the ICSID workshop and how the lessons of Interdesign could be applied in other contexts. This paper recounts the practices, challenges and lessons learned by two of the 14 international designers involved in engaging with team members and developing solutions in a cross-professional and cross-cultural context. These lessons learned will be discussed in the paper by establishing the context of the workshop, discussing the cultural differences, the challenges related to the workshop setup and location, the varying design skills and the design approach itself. The authors aim to present the contrasting approaches, skills and design thinking that initially restricted the process but also to interpret the common ground that led to successful solutions for the city. The paper concludes that the lessons learned emerging from the workshop could translate towards a greater understanding of cross-cultural and cross-professional workshops engaged in socially responsible design; specifically informing international designers and students of design about best practices and design thinking as potentially being applied to other contexts such as Africa. In closing, the paper proposes support for current trends related to socially responsible design education that highlights multi-disciplinary skill sets and knowledge, design methodology and collaborative processes; and the need for educative reciprocity between design studies and design workshops.

Keywords: *Cross-professional, cross-cultural, design workshop, design studies, socially responsible design.*

Introduction

Current sociopolitical and economic contexts, technological advancements, and emerging global trends call for higher education institutions to recognize the need for interdisciplinary collaboration in cross-cultural experiences (Coryell & Spencer & Sehin 2014: 145). Student community engagement addresses the need for students to be global citizens, it develops students' capacity, and disposition,

towards social responsibility; and it adds value to campus centered study (Millican & Bourner 2011: 89). Higher education institutions which recognize this value integrate social responsibility components to curricula and promote research opportunities to understand and create/share knowledge for cross-cultural and interdisciplinary collaborations, thus informing students about real world scenarios and how they can contribute to those scenarios (Garvey 2009).

Forced with the complexity of current and future global challenges, higher education has the social responsibility to advance our understanding of multi-faceted issues, which involve social, economic, scientific and cultural dimensions and our ability to respond to them. It should lead society in generating global knowledge to address global challenges, (including) food security, climate change, water management, intercultural dialogue, renewable energy and public health (Millican and Bourner 2011: 95).

Within these implications, design has evolved to acknowledge its significant role in addressing the complexities of the global age, particularly social development, and its ability to respond creatively to challenges, human and environmental (Mau, B & Institute without Boundaries 2004: 15-19). Design is therefore tasked to address how to best leverage local knowledge responsibly through collaborative initiatives (Grigoriev & Garvey 2013). Design practice, and consequently design studies hold an important role in nurturing socially responsible design activities as part of the curriculum, emphasizing corresponding objectives and recognizing that global citizenship (as a broad theme) is paramount in creating socially responsible and engaged students enrolled in design studies (Hallgrímsson & Liu & Hadley 2013).

This paper aims to inquire about the role of socially responsible design education within the authors experiences as design participants in the 2014 ICSID (International Council of Societies of Industrial Design) Interdesign workshop in Mumbai, India. This inquiry will be discussed by establishing the context of the workshop, discussing the cultural differences, the challenges related to the workshop setup and location, the varying design skills and the design approach itself. With backgrounds in the fields of interior design, architecture and design education, the authors build on their current and respective activities (one is student, the other an associate professor) in graduate studies in Interdisciplinary Design (MDes) at Carleton University's School of Industrial Design (SID) to underline observations and experiences related to the workshop's cross-professional and cross-cultural platform.

The experiential account of the authors in the Interdesign workshop was framed by two peripheral academic activities related to studies within Carleton University's MDes program. Beyond working as team members for one of the workshop's sub-themes, the authors also served as a liaison for students enrolled in a first year graduate studio course at the Carleton University campus in Ottawa, Canada. The second academic activity revolved around the role of socially responsible design education that emphasizes interdisciplinary skill sets, design thinking knowledge, collaborative processes and practices.

As a secondary value, this paper presents observations and discusses shared knowledge that can inform international designers involved in socially responsible design initiatives in emerging economies and how this knowledge could potentially be applied to other contexts.

The Interdesign Mumbai Workshop

Since 1971, the International Council for Societies of Industrial design (ICSID) holds Interdesign workshops in which participants from different countries and design competencies analyze and define problems, develop and propose implementable solutions for social issues of regional, national or global significance. The workshops are hosted by ICSID member societies and are held approximately every two years. In 2014, the Interdesign workshop was hosted in Mumbai, India from February 5-19. Under the broad theme of 'Humanizing a Metropolis', members of the faculty and the administration of the Prin. L.N. Welingkar Institute of Management Development and Research (WeSchool) researched and proposed the following sub-themes: 'Health on the Go', 'Visualizing Matunga as an Educational Township', 'Zero Waste Household', 'Redefining the Outdoor Experience', 'The Great Indian Bazar' and 'Living with Rain'. Each sub-theme had a related sub-set of critical issues that were addressed by a design team of international designers, local designers, students and faculty.

Cultural fabric and landscape: WeSchool and IFeel

As host of the Interdesign Mumbai 2014, Prin. L.N. Welingkar Institute of Management Development and Research (WeSchool) provided workshop space on two distinct campuses. The WeSchool campus in Mumbai and the IFeel campus (Institute for Future Education in Entrepreneurship and Leadership) in Lonavala which is located approximately 95 km south-east of Mumbai. Both campuses were different in many ways, the WeSchool campus in Mumbai is located within the Matunga District which is home to over 50 schools ranging from kindergarten to higher education institutions; it is also situated within 5 km of the world's largest slum: Dharavi. The Matunga District is a bustling, energy filled neighborhood with eclectic scenes of students mingling, laborers at work, professionals on the go and homelessness. It is also a relatively quiet area (as opposed to other areas in Mumbai), with an architectural mix of residential units, outdoor markets, offices, parks and shops. Contrasting the WeSchool's central urban location is the iFeel campus in Lonavala. This more recent campus sits in a flat, windswept valley at the base of a small mountain range. The contrast between both campuses was very perceptible while working in Lonavala, most notably in the absence of the chaotic noises of the city, the clean air and low population density.

The WeSchool and iFeel campuses provided several layers of contribution to support the design process including access to different spaces such as classrooms, studio space; and also equipment, technology, transportation, accommodation and food. The faculty and administration also played an important role in developing the workshop sub-themes, providing backup information related to the critical issues, coordinating meetings with key municipal actors, facilitating site tours and presentations as well as participating actively in design teams.

For the purpose of this article, the authors will expand on the theme for which they were assigned, consequently the theme entitled 'Visualizing Matunga as an Educational Township' will be used as the context of inquiry that informed the authors experiences as a design participants.

Visualizing Matunga as an Educational Township: process summary

The Matunga District was one of the first planned residential precincts in Mumbai but eventually evolved organically as an educational hub with almost 50,000 students studying, living and working within its boundaries. Initial discussions, presentations and walking tours revealed that the Matunga District, although bustling with activity, lacked some form of design intervention that would help visualizing the neighborhood as an educational township.

In addition to administrative activities, opening and closing ceremonies, paper presentations, team member distribution, receptions, cultural programs, exhibition of prototypes and final press conference; the 16 day workshop was established according to the proposed design process, which was separated in three distinct categories: Knowledge, Ideation, Creation (Figure 1).

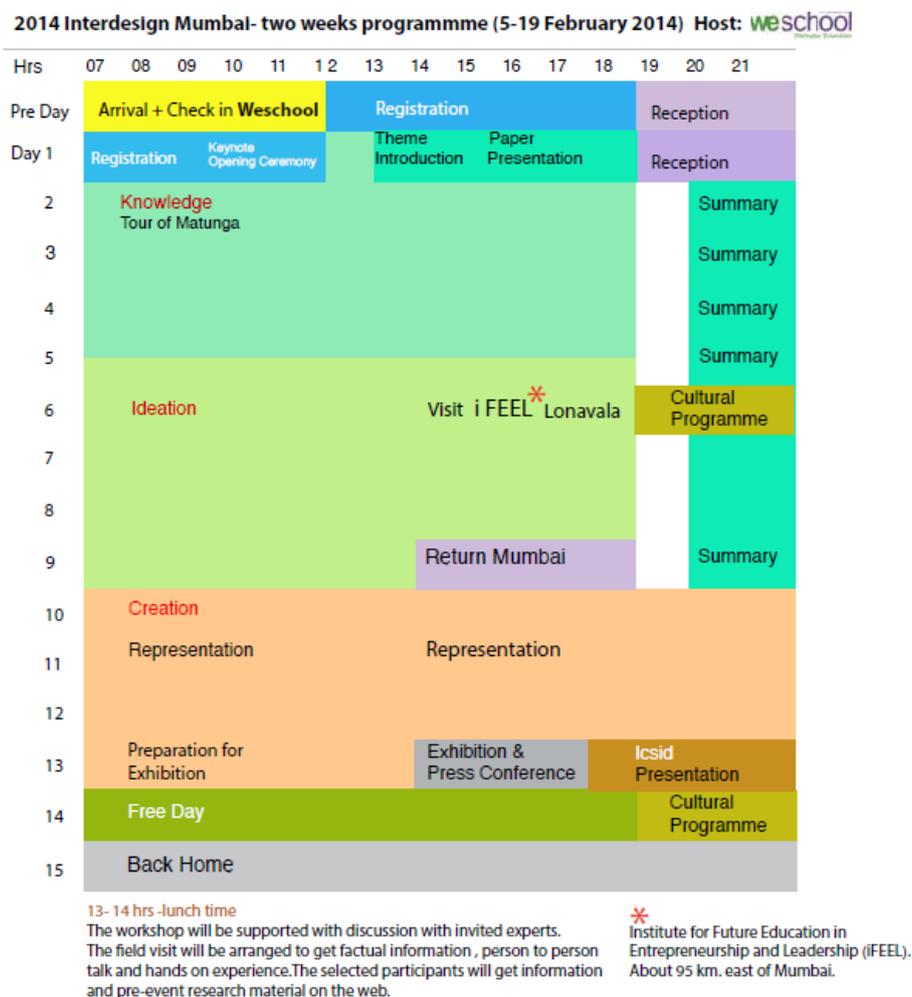


Figure 1: Interdesign Mumbai workshop schedule, International Council of Societies of Industrial Design (ICSID). Retrieved 17 05, 2014, from International Council of Societies of Industrial Design: <http://www.icsid.org/>

Knowledge process (WeSchool campus)

This 4 day design phase emphasized knowledge acquisition and empathy through presentations, multiple site and neighborhood walking tours, natural interactions with students and citizens, sound, photographic and video recordings in order to immerse the design team within the cultural and urban fabric of the surrounding community. Complementary to the value of this activity was the importance to inform the design team about the potential for positive interventions in the neighborhood, enhance citizen engagement, reduce noise and provide urban social spaces for student interaction. In order to properly address these desired outcomes, the design team was assigned a work area containing modular tables, wall display space, seating, access to printing, power outlets, Wi-Fi connectivity, a common dining and lounge area (Figure 5).

In-situ observations, challenges and responses:

Daily shuttle transportation between the hotel and the workspace at WeSchool was 1.5 hours each day, sometimes longer due to traffic, the route also traversed the Dharavi slum. Although, this 'lost time' meant less time for design activities, it had social and learning value amongst the participants; it fostered original discussions between local and international designers thus enhancing native knowledge, encouraged greater understanding and empathy towards those we were designing for, it also provided a constant window into day to day life in Mumbai, the chaotic activity and the daunting task at hand. The workspace at WeSchool was adequate in supporting collaborative team interactions; design opportunities were discussed and displayed on walls.

Ideation process (iFeel campus)

The ideation component was situated in Lonavala at the iFeel campus; it was an ideal location to start sketching ideas and concepts on paper in order to discuss potential design outcomes. This design phase encouraged collaborative creative sessions with all team members; sketches and ideas were pinned on walls as a visual reference. There were semi-regular meetings, and summary presentations to the all design teams in order to understanding other challenges, and possible connections between design outcomes. Design teams were requested to finalize concepts and prepare a list of materials for building mock-ups for the final design phase. In many ways, the iFeel campus was ideal for articulating ideas and concepts; a calm environment and natural surroundings were conducive for ideation activities.

In-situ observations, challenges and responses:

Individual workspaces were assigned by way of lottery on the first day, but the strategy quickly failed. Most of the designers ignored or individually re-assigned themselves to their ideal work location on campus. Designers, who were assigned an office or library location indoors, found other workspaces within the campus, such as ground floor spaces open to the natural surroundings. Design teams moved desks and chairs on the lawn; meetings were setup in the courtyard. This design phase required a certain level of individual creation in contrast to only collaborative conceptual work. This unplanned shift of the design process created some frustration and fostered discussions on process methodology. Wifi connectivity was a problem and restricted online research at times.

Creation phase (WeSchool campus)

The creation phase was essentially the prototyping component of the workshop. Materials that were requested during the ideation phase were delivered to the WeSchool workspace and design teams divided the material amongst themselves as per their specific materials list. Carpentry tools and materials were brought on site to facilitate the fabrication of prototypes; several model builders were on hand to assist the teams in transforming concept to prototype (Figure 2). This final design process also included poster design and printing, written handouts, presentations to city officials and press as needed.



Figure 2: Final prototype touch-ups

In-situ observations, challenges and responses:

There were no pre-workshop meetings within teams and thus no single strategy with respect to common software use; this resulted in some teams using a variety of tools to develop conceptual models. Fabrication of mock-ups was delayed for some teams due to unavailability of model builders. Designers who had illustration software knowledge were in high demand for poster designs; in some cases they helped out other teams to complete their designs. Basic, web-based and user-friendly illustration software was also used to complement poster content.

Final design outcomes:

Following the workshop, the design team assigned to the theme entitled 'Visualizing Matunga as an Educational Township' articulated several phased outcomes for the neighborhood. Implementable solutions proposed enhanced streetscapes for student-community interaction, street furniture designs (signage, lighting, furniture and flexible structures), interactive and experiential elements (kiosks), transportation initiatives for alleviating traffic, establishing the neighborhood boundaries through graphic design, harvesting student's free time for a mobile unit and open learning lab within the community. These outcomes were presented to city officials and other various stakeholders at the end of the workshop. In a very broad narrative, these proposed design interventions responded to the need for the community to experience a sense of place. The design outcomes were articulated through multiple forms of collaborations, dialogue across disciplines and a design process common to design studio work and design thinking, reflecting design studies and methodologies.

Overall observations and challenges

Schedule: The workshop schedule was presumably established as a reflection of a typical work day in Mumbai; all design teams worked on average 10-12 hours most days, with one day off. Impromptu discussions among the international designers yielded comments that this was unsustainable on the long run, and difficult to adjust to in the first week considering the time difference. There were unintended consequences to the hectic schedule, some designers left early or decided to work from the hotel in order to optimize creative output. This situation was initially misinterpreted by the organization committee but eventually understood as an acceptable compromise, albeit with some resistance. In

addition, the workshop had established broad milestones but sporadic and impromptu deadlines the 'day of' contributed to frustration and confusion for some design teams.

Cultural: There was no perceptible hierarchy within design teams. All designers, faculty and students had the possibility to engage in the discussions, take part in conceptual work and decisions. The cultural differences were mostly related to different interpretations of a 'work day' schedule.

Intended design outcomes: Early in the design process, design teams were informed that the workshop's desired outcomes were required to be implementable and proportionately scaled, understandably so. However, this framework somewhat inhibited/restricted the design process and excluded the conceptual development of grander visions for the city.

Socially responsible design education and in-situ cross-cultural design

The MDes program at Carleton University provides material and immaterial elements that correspond to social responsibility objectives within curricula. The MDes studio space serves the students and faculty in delivering curriculum that integrates social design themed courses and related subjects. The studio's design is typical of many design studios, it contains open spaces, adequate equipment, wall display space and modular furniture; it can be adapted to support collaborative learning and teaching. The program structure provides access to activities/projects that are conducive to learning about social design and how it applies in real world contexts (Garvey 2009). The School of Industrial Design's (SID) undergraduate and graduate program fosters project-based learning through associations with NGO's and other organizations to develop design solutions within local and international social initiatives.

The authors secondary role as liaison for a team of graduate students working on a parallel theme at Carleton University in Ottawa, Canada was framed by a parallel set of inquiry. As part of a graduate studio course, these students were involved in developing modular pre-fabricated housing for the students in India, and particularly in the Matunga District of Mumbai *Humanising a Metropolis: Student Housing in Mumbai*, (Carleton University MDes project 2014). This peripheral activity included maintaining lines of communication, exchanging relevant information, providing visual and audio records of site visits and existing student residences as well as sharing student surveys regarding housing conditions. This form of remote interaction provided a platform for the students in Ottawa to gain deeper understanding of the student demography, the cultural and social context as well as the landscape of the neighborhood. As a final deliverable, the student team proposed content and design outcomes through poster design, scale models, an informative website and a year-end exhibit. The assessment framework for this studio course quantified the students' level of engagement, quantity and quality of work, collaborative interactions, and final deliverables.

In many ways, the Carleton University's School of Industrial Design (SID) studio courses mirrors international workshops that serve social design initiatives, including the Interdesign Mumbai workshop; a team of designers is assembled in adequate studio space to address critical issues of different scales, in different geographic locations, are provided with research material, are handed adequate tools, have access to key actors and proceed to develop solutions by using design thinking methodologies that emphasize interdisciplinary collaboration and end user empathy. The learning outcomes for students engaged in situated cross-cultural initiatives (meaning engaged on the site of the project) far outweigh campus centered attempts at social design; students learn about the

importance of designing within the context, history, personality, and aspirations of a society while re-enforcing a student's ability to become a creative thinker and designer (Millican & Bourner 2011: 148).

Findings

Socially responsible design education responds to a growing demand for students to be global citizens; the Interdesign workshop in Mumbai provided a contextual framework for design students (and professional designers) to be immersed in a culturally situated social design initiative. These initiatives in workshop/collaborative contexts positively contribute to design studies and will continue to positively contribute to design education curriculum (Garvey 2009). Immersing students into cross-cultural and cross-professional design workshops provides real world learning opportunities for students and develops their self-efficacy, enhances collaborative skills and encourages greater empathy (Millican & Bourner 2011: 91). The student/professional interactions provided by real world scenarios are clearly beneficial to towards emulating the kind of experiences that students will eventually perform throughout their career (Garvey & Allison & Mehta 2007).

In higher education studies, including graduate level, students engage in multi-faceted inquiries, skills development, knowledge acquisition and research; all learning activities that culminate in some form of assessment to quantify the value of the students work. How do these forms of assessment translate into the workshop context? The extent of cross-cultural and socially responsible experiences that form part of educational outcomes are often unknown, or difficult to assess (Tarrant 2010: 442). However, Tarrant does argue that student-community engagement can be assessed by requiring students to write essays or other forms of writing (Tarrant 2010: 446). Articles, presentations and exhibits can demonstrate student's and designer's comprehension of the critical issues and effectively propose conceptual solutions; but how, once implemented, can the impact of these solutions be measured? Can we assess the workshop outcomes as we would assess outcomes in a pedagogical model? Should we?

The Interdesign Mumbai workshop design outcomes yielded after several weeks of design processes that included knowledge, ideation and creation phases were all valid in that they were addressing complex social and infrastructure problems in the city. Many follow up articles were published about the workshop outcomes, but at the time this article was written, none of the design proposals had been implemented. The authors' experiences with interior design and architecture required all projects to be post-evaluated following implementation as a standard of professional practice. The related student project in Ottawa was followed by a student/public conference at Carleton University as well as a final exhibit. While the Interdesign Mumbai workshop did provide several presentations and a final exhibit, post evaluation exercises would be impractical for the designers involved in design workshops. However, this does raise a valid question; at the minimum can the workshop outcomes be assessed, albeit in a limited way? This paper proposes that design workshops could be inspired by pedagogical models of assessment in higher education institutions; specifically institutions that are involved in project based social design initiatives as possible starting points for developing assessment frameworks. These frameworks could contribute in stimulating continued efforts for implementation of designed solutions. Moreover, building more intimate relationships between higher education institutions and workshop organization committees may enhance learning outcomes for students, and consequently better assessment tools for design outcomes.

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MIND THE GAP: A MULTIDISCIPLINARY SETTING FOR SOCIALLY ENGAGED WEB DESIGN EDUCATION

Ingwio D’Hespeel

LUCA School of Arts

Abstract

Real innovation wells where creativity and technology meet. In European web and mobile design education however, the reality is that there is often quite a gap between these two capacitors. The main reason for this situation is that in the early days Technical Universities in charge of web design courses entrusted this task to the departments that seemed most suitable, such as Computer Science and Electrical Engineering. The same is also true for Communication Faculties and Design and Art Institutions. Nowadays, we realize that web and mobile design requires a much more cross-disciplinary approach and needs to be taught by teams including interaction designers, web developers, communication experts and usability specialists. “Mind the Gap” is an international two week programme aiming to mend this gap by bringing together students and teaching staff from creative, technological and communication departments during an intensive interdisciplinary web design course. Web design students usually get to design solutions for real world problems, design challenges they will be facing in their professional lives, too. During this intensive programme, however, the design challenges focus on social issues and are intentionally kept as open as possible. For instance, a possible assignment could be “build an application which helps to combat poverty in Europe”. An open challenge like this one without obvious solutions demands more cross-disciplinary creativity and communication of ideas from the students, and teaching and training these transversal skills is exactly what we are aiming at in this course. This paper sets out the objectives, structure and learning outcomes of “Mind the Gap”, describes the lessons learnt from organising three yearly editions of the course, and shortly introduces new ideas for adding an entrepreneurship element to the social design component of the course.

Keywords: *web design education – multidisciplinary – international project work – teaching transversal competences – social design.*

Introduction

In 2011, a kick-off edition of Mind the Gap was organised in Gent, Belgium. This intensive two week course brings together web design students and teaching staff from all over Europe and from a wide range of complementary web design related disciplines: IT, design and communication.

The core idea of the course is to develop a web app prototype around a social challenge. Students work in multidisciplinary teams and run through the complete process, starting from the generation of ideas (creative techniques, brainstorming, prototyping), to developing the application prototype (design, implementation and usability) and presenting intermediate prototypes as well as the final product (communication).

Although the social design challenge was initially mainly installed as a method to move away from the more concrete assignments the students usually face in their respective study programmes, we noticed that this subject matter almost instantly stimulated discussions among the student team members about cultural, economic and social issues and differences, thus unexpectedly becoming one of the more important ingredients of the course.

At the time of writing, a new project proposal is going through an evaluation procedure for European funding. The goal is to organise another three editions of the programme while adding a more explicit 'design for the greater good' component to the course: a social entrepreneurship module will be installed in close collaboration with local organisations and authorities.

Background and rationale

The concept of 'Mind the Gap' is based on the following ideas:

1. The fact that web design education throughout Europe is a multi-headed creature: in the rising days of the internet, web design study programmes have been adopted either by art departments, technology departments or communication departments. Web design is a multi-disciplinary subject, though, which requires both creative, technical and communication skills. The traditional web design study programmes do not usually offer such multidisciplinary expertise and learning environment.
2. Todd Zaki Warfel's ideas, distilled from his book "Prototyping, A Practitioner's Guide" (Warfel 2009). The book not only describes the numerous advantages of the prototype as a design tool in the software and web industry, it also inspiringly demonstrates its power as a communication tool. The cliché saying that designers and developers do not speak the same language unfortunately holds a lot of truth. The prototype solves this problem: instead of describing, it actually shows, hereby strongly reducing misinterpretation.
3. A 2009 study on the state of web development education in the USA (Jensen-Inman 2009) unveiled that web design education is usually about two years behind on what the industry has already adopted. No similar research is known to have been undertaken in Europe, but according to our own field work and experience, the situation here is considerably similar.
4. The capacity for generating new ideas is in the top 5 most wanted skills that employers seek in freshly graduated job candidates (Ward, Jackson & Mukembo 2013). Yet higher education curricula that have courses in which creative competences are explicitly taught are hard to find. Surprisingly, this is sometimes also true for study programmes that target the creative industry.

Aims and objectives

Mind the Gap tackles the above issues by bringing together students and teaching staff from art, technology and communication departments as well as people from the industry in an international intensive course of two weeks.

The objectives of the Intensive Programme (IP) are:

- To increase the employability of web design students by practising inter-disciplinary communication competences, using prototyping as a design and communication instrument. In the field of web design, being able to work in a multidisciplinary context is essential. By actively developing prototyping techniques during the workshops, the students will learn

invaluable competences. These skills are much harder to develop in the traditional study programmes because they often miss the multidisciplinary context.

- To increase the employability of web design students by teaching and developing creative competences. Creative skills are largely underrepresented in most curricula. This IP intends to inject some of these competences into the existing study programmes. It also hopes to inspire the participating study programmes to more explicitly incorporate creative skills in their own curricula.
- To sharpen the lifelong learning attitude of students. Art is often a major inspiration for new technologies. The opposite is also true: new technological evolutions often inspire artists to new ways of thinking. It is often noticed that students limit their actions to what they assume is possible or acceptable. Bringing together “creatives” and programmers usually triggers a multitude of questions (in both directions) which lead to more research or at best to new ideas (“I had no idea this was possible, that opens a whole new range of possibilities!”, “I’m not sure what you designed is actually possible, give me some time to find out if there’s a way...”).
- To transfer knowledge and competences. Bringing together teaching staff and students from different educational backgrounds and having them cooperate generates interdisciplinary knowledge transfer, not only from teaching staff to students but also among peers (student-to-student and teacher-to-teacher).
- To integrate the IP in the existing study programmes. All study programmes of the participating partners have one or more courses in which students have to develop design solutions for realistic web application challenges. Depending on the individual study programmes though, the focus of these courses is either mainly on the graphical product, the communicative value or the technological aspect. The IP can be easily integrated in these existing courses in the respective home institutions.

Methodology

European funding makes it possible to organise this annual intensive course of two weeks. The first edition was held in Gent (Belgium), the second in Terrassa (Spain). The third edition was hosted in Porto (Portugal) in March 2014. About 20 to 30 students from seven partner HEIs can take part in the course. Each partner institution contributes at least (but usually more than) one lecturer to the IP. Guest lecturers from the industry strengthen the teaching team.

Innovative nature of the IP

The innovative nature of this IP lies in the context and the way the subjects are handled:

- Prototyping is applied in most design areas. In web design though, prototyping only recently slowly started being adopted by the industry. In web design education, a prototype is usually a product of a learning path but is rarely used as a learning and communication instrument. Quite often, innovative ideas are not much more than the injection of an existing idea into a new context. This is exactly what is happening in this IP.
- The existing web design study programmes often miss the multidisciplinary context inherent to the web world. This IP is a chance for the partners to break out of their own context and take advantage of each other’s complementary competences.
- We already described the power of the prototype as a communication tool between people with different educational backgrounds. From an international point of view, this is also true for people who speak a different language and/or live in different countries. In this context of

different cultural backgrounds too, the prototype becomes a powerful common communication “language”, thus breaking down barriers for cooperation and enhancing employability in an international context.

- Web design students usually get to design solutions for very concrete problems. The students in this course however get an extremely open challenge, demanding more cross-disciplinary creativity and communication of ideas. Moreover, a challenge like this one stimulates discussions among the team members about cultural, economic and social issues and differences, thus adding an extra, less explicit layer to the European dimension of the project.
- By including people from web companies and the prototyping software industry, the students are confronted with yet another point of view. This also allows incorporating state-of-the-art knowledge and know-how into the course.

Work plan

To be eligible for European funding, an IP must span a period of at least 10 working days. Mind the Gap is organised over the course of two weeks. Half of this time, the first week, is dedicated to teaching and training creative competences interweaved with demos and hands-on workshops of prototyping software, tools and methods. The second week focuses on producing the actual product and preparing for the final jury presentation.

The first day starts with a general overview of prototyping and a keynote lecture, which introduces the theme of the course. As mentioned above, the team assignment is deliberately kept as open as possible. The European Year Theme is used as central element: in the first edition the topic was volunteering, 2013's theme was citizenship and the third edition worked on reconciling work and family life. The keynote speech addresses this central topic. Using the theme that the European Union focuses on allows us to also *sneak in* more profound international competences such as social awareness, European citizenship, etc. In the afternoon international and interdisciplinary teams of 4 or 5 students are formed and a breaking-the-ice exercise is given: present your team to the other teams. By imposing a specific presentation style, Pecha Kucha, the students get introduced to alternative presentation methods.

Day two starts with a hands-on session on collaborative idea generation and brainstorm techniques. The rest of the first week builds on top of this and consists mainly of creating an app concept through coached student team work and regular idea pitches. This process is interspersed with short (guest) lectures and software demos of prototyping software. The week ends with a group presentation of each team concept.

The second week is dedicated to the translation of these ideas into actual prototypes. Most time goes to team work. One lecture is planned to help prepare the students for the final jury presentation.

The jury consists of one staff member per participating institution. The jury evaluates the presentation and team product and gives one mark for each team. This number is processed with internal peer evaluation resulting in the individual student scores.

Learning outcomes

Over the course of two weeks the students have acquired new knowledge and have had several opportunities to practise the following competences:

- **Prototyping as a design and communication instrument:** the students have acquired competences in several prototyping techniques and technologies and have knowledge of their respective advantages related to different application contexts and good practices.
- **Creative competences in a multidisciplinary context:** the students have acquired competences in creative techniques and idea generation activities that empower all team members, even those with a 'less creative' background. The students have trained these skills in teams.
- **Team work competences:** the students have developed team work competences, including leadership, communication skills (the prototype as a communication tool between 'creatives' and 'techies'), in a European intercultural and interdisciplinary context.
- **Presentation skills:** the students have acquired new knowledge on alternative presentation techniques (Pecha Kucha, idea pitching) and presentation skills in general. They have had many opportunities to put this knowledge into practice, using the English language and prototyping as the common communication media.
- **Intercultural transfer:** although a less explicit learning outcome, it is also important to mention the expected intercultural and interdisciplinary transfer among peers.

Lessons learnt and ideas for the future

The Mind the Gap concept works; both students and lecturers describe the intensive course as fruitful and inspiring. Nonetheless, there are still possibilities for improving the programme.

One issue that emerged from student evaluation of the second edition is that the programme was too full. Indeed, it seemed attractive to have a first week stuffed with inspiring lectures. The student evaluation though confronted us with the fact that actually most of the learning happens through the coached interactive team activities rather than during the lecture moments. The third edition had a more balanced schedule with more time for idea generation and team work (like the first edition also had).

As mentioned earlier, the social design aspect of the course was initially not much more than a well-appreciated by-product. Quite quickly though it became clear that we had totally underestimated its potential as a main hook onto which all course components could be hung. Moreover, the nature and quality of the students' output nurtured the idea to incorporate a social entrepreneurship component in the course: going from idea to product.

Considering the aforementioned remark on the value of "team time" though, a more recent and feasible idea emerged to design a new course, in which the concept of training creative competences in international interdisciplinary teams remains the central core. The "shell" around this core shifts focus, from the prototype as a learning and communication tool to prototyping innovative social design solutions and bringing them to the market.

The overall theme of this new course is Smart Cities. 'Smart' here, refers to social and environmental sustainability in an urban environment. The idea is to closely collaborate with local authorities and organisations and use open data streams to empower citizens, organisations and policy makers. If the project gets funding, the first edition of 'Open Up' should launch in the spring of 2015.

Conclusion

Creating an international and multidisciplinary learning environment to train communication and creative competences in a social design context proves to be rewarding. Mind the Gap manages to mend the gap between web design students from different educational backgrounds by involving all of them in the creative process while at the same time offering them “the prototype” as an empowering communication method through the principle of “show-don’t-tell”.

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DESIGN ACTIVISM: SCHOLARS AS DESIGN ACTIVISTS

Lorella Di Cintio

Ryerson University

Abstract

The need to improve the living conditions in underserved communities has been the topic of discussion worldwide, and local and global design practices continue to be questionable in terms of economic sustainability, access to food, clean water, and shelter. This paper attempts to link design activism with design education, and calls for scholars to re-think design pedagogy. The first part of the paper makes an effort to respond to the emerging pedagogical shifts within the new field of design activism, and the second part, "The Design Scholar as Activist," highlights the noteworthy projects of scholars whose pedagogy and critical work is linked with activism. The paper has multiple goals: to promote debate, discussion, and theorisation among design academics about the place of activism in design, and to contribute to the development of knowledge products that focus on embedding design activism into the design curriculum. Its overall objective is to nurture a shift towards design activism in design pedagogy.

Keywords: *Community and/or Civic engagement, Design activism, Design pedagogy, Social Justice.*

Introduction

Dissatisfied with what they perceive as an over-emphasis by the design community on aesthetics, and concerned about the community's failure to meaningfully address the design needs of at-risk and low-income communities, a growing number of academics in the field of design have begun to incorporate social justice issues into their teaching and research. Models, modes, and methodologies for action now need to be developed within the design academy, to incorporate what are now essentially grassroots initiatives into the mainstream. This paper was inspired by my desire to make design activism a more central component of design pedagogy.

Design Activism

The linking of design activism and education as a new model can expand discourse in the field of design. By bringing together a diverse group of voices, philosophies, and practices, it is possible to explore moral and political dimensions that are not normally tackled by the design academy or the profession. This paper, and related initiatives by other researchers, can be considered an introduction to the complex issues currently arising from earlier models of community and service-learning pedagogies, and can also be considered a developing field in its own right.

Design activism is informed by a number of different theoretical and socio-political frameworks. Key to this approach is mapping the links between applied design activist initiatives and theories, specifically those relating to culture, criticism, aesthetics, consumerism, and globalisation. In *The Systems of Objects* (1996, 2005), Baudrillard analysed the production of designed objects and argued that design has reached its limits in terms of being truly socially progressive or even meaningful. In *Empire*, Hardt

and Negri analysed the concept of struggle in relation to capitalism, and suggested a new paradigm in which there is “no territorial centre of power and [it] does not rely on fixed boundaries or barriers” (2001: xii-xiii). Their focus was on the shape of social composition and class struggle as characterised by the concept of revolution. Design activism is also grounded in Michel Foucault’s (1972–1977) critical analysis of how power and knowledge are wielded and produced – in particular, his discussions of the cultural production of expert knowledge. Similarly, Claire Bishop’s historical and theoretical reviews of socially engaged participatory art (2006, 2012) and Nicolas Bourriaud’s (2002) relational aesthetics inform design activism by linking contemporary aesthetics with professional debates about art.

The thematic underpinnings of design activism are also influenced by several key social justice movements of the 20th and 21st centuries. It is important to acknowledge particular progressive social movements, including the civil rights movement, the movement for lesbian and gay rights, the movement for women’s rights, the international Indigenous rights movements, the environmental movement, and most recently the global occupy movement. T.V. Reed’s *The Art of Protest: Culture and Activism from the Civil Rights Movement to the Streets of Seattle* (2005) is an excellent source of information about social activism that is based on cultural politics and makes use of cultural artefacts.

Activism within the field of design is an under-researched topic. Few scholars have investigated how design can affect cross-over activities in the realm of advocacy and activism, and fewer still have analysed the extent to which design activists have been able to re-orient ethical design protocols within local, national, and/or global contexts. The modality of activism rarely enters design curricula, yet universities across the globe are attempting to expand their civic engagement protocols. Existing literature offers little guidance about teaching design activism in institutions of higher education. Educators and practitioners cannot work effectively without guidelines and tools, and no textbooks are dedicated to the pedagogy of design activism. Because universities are increasingly emphasising experiential and service learning in their mission statements (Boyer & Mitang 1996; Bringle & Hatcher 2000; Zollinger 2009), determining how to use activism to its fullest potential in design education is an appropriate and timely task.

At the beginning of the 21st century, a new paradigm of design emerged, embracing social justice and community engagement. This growing field would later become formally known as ‘design activism.’ A small but growing body of design activism scholarship is developing, but the field needs to widen to include issues such as design practice and pedagogy, environmental sustainability, social change etc. (Berman 2009; Mau & Tigerman 2008; Polak 2008; Steffen 2008; Smith & Smithsonian Institution 2007; Thorpe, 2007; Stohr & Sinclair 2006; Stegall 2006; Charlesworth 2006; Thackara 2005; Merkelbach & Palleroni 2004; Mau, et al. 2004; Bell 2004; Sterling 2003; Benyus 2002; Dean & Hursley 2002; Papanek 1995; Thackara 1988; Papanek 1985). Recently, a few design practitioners and scholars have attempted to classify different types of design activism (Badanes et al. 2008; Fuad-Luke 2009; Thorpe 2012). Some practitioners in the field of design activism have been motivated by a specific cause or an event, while others have focused on practice motivated by various types of *pro bono* projects. Still others have incorporated issues related to globalisation (Thorpe 2012). In 1985, UNESCO product designer Victor Papanek published *Design for the Real World: Human Ecology and Social Change*, establishing him as one of the earliest-known activist designers; he advocated for socially responsible design and used a non-Western approach to design practice.

Several designers have worked to develop design solutions within the context of the global social justice movement. Lacking any shared critical language or historic documentation, they were forced to create new forms of practice. The advocacy design work of the AIDS Coalition to Unleash Power (ACT UP), which led to the slogan and image **Silence = Death** (a pink triangle on a black background, 1987), pre-dates contemporary social media mechanisms and is historically significant because it employs principles from earlier design activism initiatives. By 2007, more evidence of this new design practice appeared in the precedent-setting exhibition *Design for the Other 90%* at the Cooper-Hewitt National Design Museum, Smithsonian Institution. The show tackled global challenges related to access to food, clean water, and shelter, and included more than 30 projects by designers, academics, and social entrepreneurs who had designed low-cost solutions for under-privileged populations. The exhibition, along with two well-known not-for-profit organisations that provided free/pro bono design services (Architecture for Humanity and Design Corps), demonstrated that design practitioners were starting to leave the protected confines of the traditional design studio.

The logic of design teaching and practice has traditionally tended to overlook issues related to activism and social responsibility (Stohr & Sinclair 2006; Smith & Smithsonian 2007), but clear evidence demonstrates that design practitioners and educators are moving beyond this logic. Social activism during the 1960s and 1970s inspired widespread consciousness of the urban condition. Today, many individuals, including educators, tend to be more productive and critical, and have proven their willingness and capacity to embrace contradictions (Anjou, 2010; Shirky 2009; Friedman 2008; Klein, 2007; Hawken, 2007; Bornstein, 2007; Margolin 2007; Hester, 2006; Edwards 2005; Holloway 2005; Heller & Vienne 2003; Higgs 2003; Braungart & McDonough 2002; Gore 1992; Brown 1981). Many have also demonstrated a readiness to take on socially responsible design. Isolated incidences of this kind are occurring everywhere, but no overall vision/support is available to guide them. Current documentation of this kind of work is limited to discussions of individual projects by practitioners, and does not offer any guidance to educators in the field of design, or to its organising professional bodies. It is becoming increasingly clear that the modes behind these initiatives need to meld more naturally into socially engaged teaching methodologies within the field of design (Frascara 2007; Trip & Muzzin 2005; Dutton et al. 1996; Hooks 1994; Dutton 1991; Freire 1970).

Design Scholar as Activist

In recent years, debates have intensified within the design community about the relationships between consumption and sustainability in global design practices. Global uncertainties have always affected discussions about the nature of effective pedagogy within institutions of higher education, and teaching has had a historic relationship with teaching and social engagement. Raymond Williams eloquently pointed out that the philosophy of education was one who's "deepest impulse was to make learning part of the process of social change itself" (1989: 257). Scholars Paulo Freire and bell hooks both oriented their educational projects toward empowering marginalised communities, and thereby linked pedagogical discourse to the political practice of activism. Their methods stressed the need to foster empathy within the community, while respecting individual input – thereby fulfilling the ultimate objective of inclusive pedagogical practice.

The work of Brazilian educator and philosopher Paulo Freire is relevant to all design educators who want to expand their community engagement and teaching methods related to service learning. Freire outlines his pedagogical methodology in his "Experiments in Utopian Pedagogy" (Part 3 of his well-known book, *Pedagogy of the Oppressed*, 1972/1995), which serves as a roadmap for educators

wanting to engage with a community. Freire applied his teaching methods in rural and inner-city communities, and his methods and practices became world-renowned for empowering marginalised communities. Often described as a 'radical educator,' he immersed himself within the community, removed hierarchical conditions (namely, those created when the educator is positioned as 'expert'), encouraged reciprocity between teachers and students, and developed contextual teaching methods.

While Paulo Freire (1970) provided an interesting and rich perspective of educational projects in action outside the classroom, bell hooks used the classroom as a platform for spirited discourse. She assembled teaching and learning contexts that innovatively addressed feminist and antiracist pedagogy. For Hooks, the classroom was the ideal context "when one begins to think critically about the self and identity in relation to one's political circumstances" (Hooks 1994: 47). In her book *Teaching to Transgress* (1994), Hooks described using transformative pedagogy, specifically asking students to use journal writing, video, music, and/or popular theatre to communicate values and beliefs. Her approach to re-positioning the classroom and valuing student-directed output were at the forefront of radical and social-change pedagogy. She believed that by opening up classroom discourse to include issues related to feminism and antiracism, students would begin to take ownership of their learning experiences. She blended numerous pedagogical frameworks and described this as an 'engaged pedagogy,' stating "engaged pedagogy recognize[s] each classroom as different, that strategies must constantly be changed, invented [and] re-conceptualized to address each new teaching experience" (Hooks 1994: 10–11).

Hooks and Freire were both making conscious pedagogical shifts, exposing internal and external discriminatory practices in hopes of mobilising individuals to address social justice issues. Their activism permeated throughout their teaching. Rather than taking on the traditional roles of domination and power as educators, they attempted to expose dominant powers and inequalities, and to share power within their respective learning environments. According to Matthews (2005: 96), "Teachers become activists when they interrogate their own beliefs and pedagogical practices to determine the ways in which they maintain or challenge dominant forms of knowledge and existing power relationships. They become activists when they interrogate the theoretical frameworks that inform *what* they teach and *how* they teach, and when they interrogate the ways in which their pedagogical practices support or challenge the status quo.

To remain relevant, design pedagogy must move toward a new model of (design) activist pedagogy, as exemplified by Freire and hooks. This new model needs to meld transformative social justice learning with community and service learning pedagogical practices to nurture service learning within the context of community engagement. To facilitate this new model of (design) activist pedagogy, faculty members must become equal participants rather than authority figures in the educational experience – in other words, they must become activists. As far back as 1996, the Carnegie Foundation for the Advancement of Teaching stated that "students and faculty alike should regard civic activism as an essential part of scholarship" (Boyer & Mitang 1996: 28).

Conclusions

Design educators working within the new field of design activism need to re-evaluate and expand their traditional pedagogical approach of presenting 'expert' knowledge in order to avoid cursory compliance from the students and/or clients. The design academy needs to recognise that the intentional shift away from a focus on pure aesthetics will not damage the design profession, but will

actually expand the design community's role and responsibility for the public good. Also, the design academy needs to acknowledge that design activism is a field in its own right: it uses mixed media to combine aesthetics with ethics, specifically those rooted in socio-political activism and community building. This author believes that design activism is deeply rooted in the ethics of caring, which is inherently linked with the willingness to share (i.e., education).

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SERVICE-LEARNING IN INTERIOR DESIGN: REFLECTION AS A TOOL FOR LEARNING

Carolanda du Toit

Greenside Design Center

Abstract

In response to the 1997 South African White Paper on Higher Education Transformation Community engagement was introduced as one of the core responsibilities of higher education institutions alongside that of teaching and research. Learning alongside the community placed less emphasis on the ivory tower deliberations and more on engagement with societal issues. In doing so a platform was developed to demonstrate a visible display of social responsibility. Mainstreaming Service-Learning (SL) into course work provided its legitimacy in the academy (O'Brien, 2012). The service was considered reciprocal and mutually beneficial rather than the traditional 'top-down', charitable approach. The intention of this was designed to equally empower both students and the community. Interior design was one of thirty six programmes used to pilot SL projects as a vehicle to build capacity within higher education institutions across the country. It is widely reported that reflection is the key component in SL providing opportunities to link academic learning with practice. Students also acquire a greater understanding of their values and personal beliefs as well as develop a deepened sense of commitment to future civic engagement. From the research outcomes of the pilot project a model for future reflection is suggested to enhance the learning experience of SL.

Keywords: *Service-Learning, interior design, social responsibility, reflection, problem-based learning.*

The time line

Service-Learning (SL) was imported into South Africa during the first decade of the country's turbulent and emerging new democracy (Hlengwa 2010). A mere two years after the first democratic elections the Department of Higher Education released *The Green Paper on Higher Education Transformation* (Department of Education, 1996), which evolved into the *Education White Paper 3: A programme for Higher Education 1997* (Department of Education 1997). From The White Paper the founding document for higher education was developed by the Joint Education Trust in 2002. Academically based community service was now described as one of the three pillars for higher education alongside that of teaching and research. The Higher Education Quality Committee (HEQC) in 1999 invited Tim Stanton one of the pioneers of SL from Stanford University to build capacity in South Africa. From 2002 thirty six SL pilot projects at nine different universities were rolled out throughout the country (O'Brien, 2012). In June 2004, the HEQC released its criteria for institutional audits which among other requirements, made 'community engagement' and 'service-learning' an imperative for all South African higher education institutions (HEQC 2004). By 2006 guidelines for SL were published by the Council of Higher Education (CHE) which represented a historic turn for transformation for higher education (CHE 2006). Once SL was mainstreamed into the academy its legitimacy as a pedagogical tool was recognized (O'Brien 2012).

What is Service-Learning?

Dewey's (1963) ground breaking educational philosophy maintained that a hands on educational experience alongside that of reflection constituted learning. His theory continues to influence how we learn today (Kielsmeier 2010). Kolb (1984) built on Dewey's theory and he devised the cycle of experiential learning which continues to endure (CHE 2006; Hatcher 1997; Hlengwa 2010). SL is considered a form of experiential learning. Experiential education is regarded as a teaching and learning strategy that integrates education, personal development and work experience (Kolb 1984). SL is not only considered an experiential learning experience, but one that also engages students directly in the issues and needs of the larger community (Eyler & Giles 1994; Bringle & Hatcher 1999) which satisfies the mandate of the 1997 White Paper (Department of Education 1997). The CHE (2006) used Kolb's (1984) cycle of experiential learning as a map to structure SL. In addition Furco's (1996) continuum of community engagement programmes was used to provide a useful tool to understand where SL is situated in the broader context of 'community engagement'. SL falls in the center of the continuum which shows an equal benefit for the community and the student. The focus therefore is on the service being provided to the community which is considered to be equal to that of the student learning taking place.

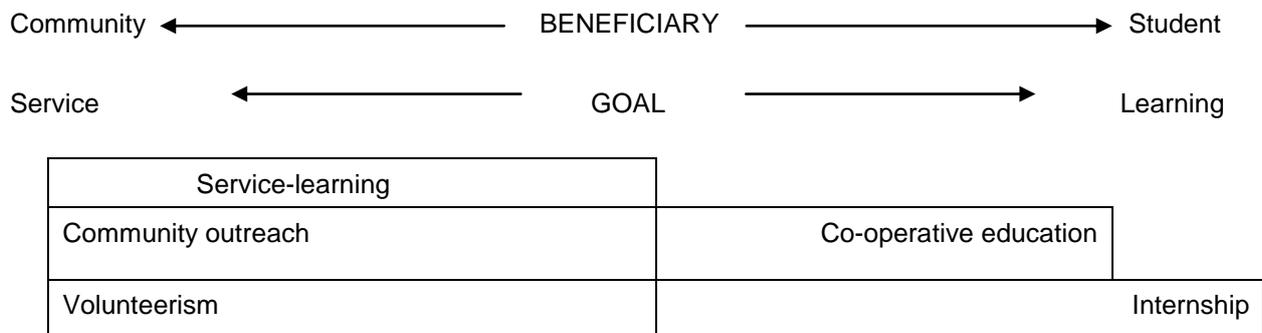


Figure 1 – Adapted from Furco (1996) The continuum of community engagement programmes (CHE, 2006)

The pilot project

Framework used for incorporating SL into the curriculum

The overarching framework of Lazarus (2000) provided the students an opportunity to address issues in a complex yet authentic setting. He situated SL on a micro level as the central discourse between the participants of the higher education institution, a service provider and a community.

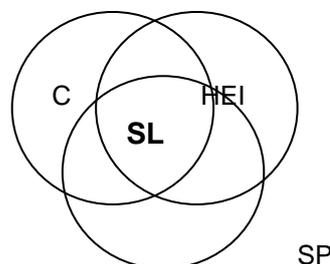


Figure 2: SL takes place in the intersection between the three participants (Adapted from Lazarus, 2000)

(C) Community (HEI) Higher Education Institution (SP) Service Provider

Problem-Based Learning (PBL)

The model of problem-based learning (PBL) was used for the pilot project. The pedagogy was premised on Kolb's (1984) model of experiential learning where the students were able to learn from their real world concrete experiences using reflection to make sense of their abstract course content in

an authentic learning environment (Gijbels, Dochy, Van den Bossche & Segers 2005). Eyler (2000) noted that the role of the educator was to provide a vehicle to help students develop their ability to apply what they had learned in a variety of settings. In this instance the problem was to find an interior design solution for the community based on the assumption that the students' had some knowledge on how to solve the problem using self-directed study (Whitfield 1999). Interior design is closely aligned to the study of architecture where PBL has been employed successfully for many years (Campus Compact [nd], Gijbels. et al. 2005). In the pilot project students' related to the community in much the same way a consultant would with a client. The learning experience provided a direct link between the problem presented by the community and the students' learning objectives (Whitfield 1999).

Step1 - Investigation

The interior design programme had an established relationship with a service provider which was a local organization representing the interior design profession. The higher education institution participants were the interior design academic staff and second year students. The community was the Centre for Rehabilitation of Wildlife (CROW) which is dedicated to the rescue, rehabilitation and release of all indigenous wildlife found in KwaZulu-Natal (Centre for Rehabilitation of Wildlife 2014). The brief was to upgrade their existing poorly resourced Environmental Educentre where children mostly from previously disadvantaged communities could attend lectures, take part in assignments that raised awareness about the importance of wildlife rehabilitation and conservation (Centre for Rehabilitation of Wildlife 2014). The brief summarized the problem of upgrading their Environmental Educentre within certain parameters.

Step 2 - Planning and preparation

During the preparation phase the academics in consultation with the community and service provider prepared a brief that met the programmes learning objectives and those of the community needs. The brief outlined the student learning outcomes, reflection activities and associated assessment criteria. The studio work was assessed using the customary continuous assessment method where students are provided with feedback during stages of the projects progress (Hernández 2012). However an alternative assessment methodology was employed for the reflective aspects of the brief. One of the key components of SL is student reflection which is considered the connective tissue between the students, their community experience and their academic, personal and social learning (Imperial Perry & Katula 2007; Whitfield 1999). In a final reflection journal, the students' were asked to describe their service experience, analyse the course content in context to their learning and finally to describe how their experience could be applied to their personal life. Assessment was measured on three levels as prescribed by Bradley (1995). At level one a mark of 50%-65%, was awarded if the students' simply gave examples of learned behavior but provided little insight in how the course material linked to their experiences both academically and personally. For level two a mark of 66%-74% was given if their observations were placed in a limited context but within an unsupported belief system. Finally for level three (75%-100%), the students would have demonstrated the ability to view multiple perspectives and placed them in context of an evidence based belief system that also demonstrated a fair assessment of their roles and responsibilities.

Step 3 - Action

The brief was handed to the students on the service site so that they could immediately orientate themselves and appraise the real life design problem. At the same time they re-acquainted

themselves with members of the community and the service provider. Thereafter sufficient time was allocated to the students in their studio to prepare conceptual solutions which were critiqued by the academic staff before they moved onto the design development stage. The process followed that of an authentic interior design project. The students' final presentation included fully rendered two and three dimensional drawings and a sample board of actual materials to be used to represent their final design. In addition technical documentation was prepared so that their schemes could be implemented by contractors on site. The students worked individually and each came up with their own solution to the problem. Once the students' designs and documentation was complete the service provider and community were invited to a presentation by the students of their schemes. The representatives of each organization selected the scheme that best suited the budget, their needs and those of the brief. The incentive for the students' was the publication of their completed scheme, over a three page spread including their photograph, in prestigious design magazine.

Step 4 - Reflection

Reflection and the assessment thereof has been covered under the planning phase of the project, however it is important to comment further as it is widely believed that reflection engenders an everlasting curiosity for the student which will last over a significant time (Eyler & Giles, 1999). The reflection activities were not linear in approach, but generally covered the four elements of learning described by Kolb (1994). The students' reflections centered on (1) the concepts of their academic theory; (2) the students' active experimentation with theory in the studio while designing their schemes; (3) the appraisal of their theory through the concrete real word experiences of the project implementation and finally; (4) the evaluation of their experiences. Purposefully designed reflection enables learning to occur which is considered central to the learning experience (McEwan 1996; Bringle & Hatcher 1999; Eyler & Giles 1999; CHE 2006). Reflection that was incorporated into the brief gave the students' opportunities to make connections between the course objectives and the SL experience. At the same time it provided opportunities for students to explore, clarify and alter their personal values (Bringle & Hatcher 1999).

Stage 5 - Celebration

After the installation phase an event was planned to celebrate the completed project. The celebration took place in the form of a site hand over. Sponsorship was secured for catering. Students' designed invitations that were sent to members of the community, the service provider, academics from the higher education institution and the local media. The celebration provided an opportunity for all participants to publically share their experiences. The intention of media coverage of the event was not only to acknowledge and validate the hard work of all the participants, but also served as an opportunity to thank the sponsors' publically with the view to attract new partnerships and securing sponsorship for future projects, thereby contributing the sustainability of SL in the curriculum. Presentations were given by the community, the students and the service provider which celebrated the final results of the design titled 'On a Wing & a Prayer'.

An investigation of the students' learning outcomes

The research design

The aim of the investigation was to determine if the pilot SL project enhanced the students' learning with the intention of sustaining SL in the curriculum. The research took the form of interpreting the students' learning experiences. The methodology was qualitative in nature. Of the twenty students' involved in the pilot project eight volunteered to participate in the research. Data consisted of the

transcribed interviews of the student 'sample'. Their final reflective journals contributed to the richness of the data. The data was viewed and analyzed through the interpretive lense of the student experience. Meaning was generated from the participants' insights and understandings of their experiences. The main patterns that emerged were situated in the three domains of learning (1) academic learning; (2) personal development and; (3) social responsibility. The three domains were interpreted using Kolb's (1984) cycle of experiential learning.

Conclusion

The three domains of learning

In the domain of academic learning most participants' believed that the theoretical abstract concepts from their course work prepared them academically for the project. They articulated the theory covered in lectures made more sense after active experimentation in the studio and concrete experience on site. They expressed that the largest learning curve was making the links between academic theory and the real world SL experience. Bringle & Hatcher (1999) noted the same in their longitudinal research study. The domain of personal experience was of particular value in that the participants' were very positive about their involvement and they observed that managing the site implementation contributed mostly to their personal growth. However the greatest impact of the experience was in the domain of social responsibility. Almost all the participants' expressed that they wanted to help in future service which was reiterated in research conducted by Simons & Cleary (2006). The enhancement of the students' learning across all three domains supported sustaining social responsible design into the curriculum.

Reflection – room for improvement

Despite the overwhelming positive feedback from the participants' on their whole experience they felt the reflective exercises did not fully capture their attention. They believed a wider range of activities would hold their continued interest throughout the project in making links between their academic theory and their concrete experience. They found the pre-service exercises fun but not useful for preparing them for their on-site experience. Most of the participants' mentioned the repetitive daily reflective logs were boring and unhelpful. Other remarks included suggestions for improvement in the structure of the final reflective report.

The way forward – reflection as an academic learning tool

A significant amount of empirical evidence suggests that the single and most important factor in SL which has an overriding positive impact on student learning is reflection (Imperial, Perry & Katula 2007). Imperial et. al. (2007) go on to say that the quality of student learning is mirrored only by the quality of reflection. Also mentioned when designing reflection activities, is that a sense of purpose and accomplishment needs to be instilled which helps in supporting student's academic learning. The HEQC (2006) service-learning good practice guide recommended using the reflection activities from the K-12 service-learning project toolkit published by the RMC Research Corporation (2009). The toolkit (RMC Research Corporation 2009) offered a model for a wide range of academic reflection exercises to enhance student learning. The model was adapted in that it was assumed the authors were students as opposed to a variety of authors and research was implicit in the reflection activities.

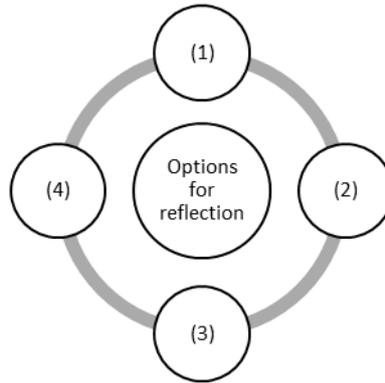


Figure 3 (Adapted from K-12 service learning project planning toolkit, 2009)

Service-learning model for preparation of reflection activities

- (1) Mode of responding
- (2) Length of activity
- (3) Audience
- (4) Criteria for assessment

There are a variety of modes of responses from students to consider when designing research activities. They are reading, writing, doing and telling. Giving students a diverse range of ways to respond will not only keep them interested but also provide a variety of reflection opportunities that suite different learning styles. While determining the length of the exercise the audience also needs consideration. The RMC Research Clearing Corporation (2009) suggested that the reflection exercises differ in response and length depending who the students are directing their response to such as their project facilitator, their peers or a community partner. Finally the criteria for assessments need to reflect the academic course content, personal growth and the student's sense of social responsibility (RMC research Corporation 2009).

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A DESIGN EDUCATIONAL STRATEGY FOR SCALING UP CLIMATE CHANGE APPROACHES IN SOUTH AFRICA AND NORWAY

Håkan Edeholt

Oslo School of Architecture and Design

Abstract

This paper reflects on the crucial combination of design education and global fairness when it comes to addressing Climate Change in an effective way. It also reflects on the just as important feature of, some sort of, "fairness" to future generations. Arguably these two features could be at odds with, or at least be a challenge for, two very typical and espoused features in contemporary design education; i.e. its focus on present and local conditions. Underpinned by this tension, this paper discuss how two design schools, one in Global North and one in Global South, intend to scale up its present local approaches to more glocal ones, that also takes future generations into account. In doing so, the paper describe the schools' attempts to nurture public democratic discourses by back-casting future scenarios to present day and scaling it up by using a special kind of Massive Open Online Courses (MOOC). The paper is not conclusive but hope to nurture a creative debate about issues being necessary in, and beyond, all strands of design.

Keywords: Design education, Climate change, Discursive elements, Development, CC-MOOC and Radical change

Introduction

The message the science gives us, is that unless radical cuts in greenhouse gas emissions take place very soon, the world is set for dangerous climate change, with all of humanity at peril (Development Dialogue 2012). Consequently there are also increasing calls from the global environmental change research community for new strategies for translating this knowledge into the kind of radical actions the situation require (O'Brien 2013). Today too much focus seems to be directed towards the understanding of how it probably will become and what it requires in terms of mitigation and adaption. In comparison, too little progress seems to have been made towards implementing actions that really can facilitate the changes the situation require. Eventually climate changes will affect us all. However the ones that done least to cause the problem, i.e. the "90% of the world's population not traditionally served by professional design" are probably also the ones that will suffer first and most. So how will humanity equitably divide the rapidly diminishing global carbon budget, while allowing billions of people in both the Global South (and North) the means for economic, social and environmental wellbeing? (Development Dialogue 2012).

Theoretical background

Even though there is overwhelming scientific evidence that humanity needs to act quickly to reduce greenhouse gas emissions (O'Brien 2013), it seems like a very challenging task for the global community to enforce such a deliberative transformation. The overview below is therefore structured

around four critical aspects of this challenge: The Big Challenge, Challenging Big Assumptions, Complex Systems of Challenges and finally From Challenges to Actions.

The big challenge

'Climate change already affects all of us, but people most vulnerable to its impacts have done the least to cause the problem (Development Dialogue 2012). There is a palpable need to highlight the urgency of taking action, but also acknowledge that any attempt to tackle climate change must be grounded in strategies that promote social equity and cohesion (Ibid.). Arguably, we are all facing a major challenge that in a simple sentence eventually boils down to: *How to (i) feed a growing population and at the same time (ii) avoid a climate disaster?*

(i) Oil dependent food production

Our present population of more than 7 billion citizens has tripled since WW2 and before 2050 we expect another 2-3 billion. The so-called Green Revolution has often been given the credits for the population explosion. However, what is often forgotten is that for every calorie of food we eat, we today typically use as much as 10 calories of fossil fuel energy just in order to get it on our tables (Shiva 2014, Keith 2009). So this 'revolution' seems more black than green. Unfortunately, we know that fossil fuels will not last (or remain as cheap) for much longer. So 'peak-oil' will unfortunately also translate into 'peak-food'.

(ii) Avoiding a climate disaster

At the same time, climate scientists claim that most of our remaining reserves of fossil fuels should be left in the ground, and in order to avoid a climate disaster, we need to drastically reduce our use of fossil fuels already today (Hansen 2009, Rockström & Klum 2012). According to the same scientists, we probably have already gone beyond a reasonable estimate of the gateway to 'dangerous climate change'.

These conditions are combining to exacerbate conflicts and security issues; initially, in already resource-strapped regions, and eventually at a global scale. Some predict Climate Wars (Dyer 2008, Welzer 2008); other (at least) *hope* that interrelated issues like peak oil and financial crisis soon will drastically empower "the power of context" and hence making society more open for required radical changes (Leggett 2014). Notably, none of these are pessimistic because technically speaking it is impossible to avoid climate crises or wars. They are pessimistic however because it seems very unlikely that we will be able to unleash ourselves from the path we currently follow. In innovative terms this translates to an inability to come up with radical social and technical innovations that disrupt "Business as Usual" (BAU), the result being a deep preference to rely on mere incremental innovations. In other words, this result in mere *optimization* of the system we already have and know.

Challenge big assumptions

Karen O'Brien (2013) discusses the importance of revealing hidden beliefs and assumptions, by Challenging Big Assumptions (CBA). For the purpose of this paper, two of the most critical CBAs seem to be based on the influential assumption that we both can protect BAU and solve the problem by *(i) optimizing our use of energy and (ii) informing citizens on how to behave climate smart*. This leads us to argue that none of these are effective:

- (i) A simple reason why mere efficiency will not work is given by James Hansen (2009): "The problem is that the act of slowing down emissions, by itself, does almost no good. The reason is

that the lifetime of carbon dioxide added to the atmosphere-ocean system is millennia. So it does not matter much whether the fossil fuel is burned this year or next year [instead we need] a strategic approach that leaves most of the fossil fuels in the ground ... [that] is the explicit message that the science provides.”

- (ii) A reason why mere information will not work is given by the sociologist Kari Marie Norgaard: “People stop paying attention to Climate Change when they realize there is no easy solution [and] judge as serious only those problems for which actions can be taken” (Keim 2009).

Complex systems of challenges

However, these two assumptions – or CBAs – are by no mean the only ones to challenge. What makes the challenge of climate change so huge is that it in itself contains many interrelated aspects. Our entire natural system is intertwined with our entire social system on a scale that is incomprehensible for most of us. Table 1 below summarizes just a few, but very critical, aspects of this enormous system of systems.

	Stated problems	Assumed challenges
Climate	Climate Change might quite soon get out of control and thereby threaten the survival of human kind. Step-wise adjustments will in that case neither be sufficient nor, as it used to be, the safest approach.	In order to reduce the risk we promptly need to implement radical changes on a massive scale. This has proved to be extremely hard to achieve, not least, in democratic countries, let alone on a global scale. So how might we simplify this process without applying totalitarian measures?
Global	Climate Change is global but also unevenly distributed in kind and time. Thus, it initially creates both losers and those who will gain. If not addressed, this trend of polarization will escalate.	Such change will cause an extreme stress on global solidarity and tax our ability to avoid Climate Wars. So how are we to promote and facilitate an ethical standard that seriously advocates global fairness instead of a regional self-protectionist attitude?
Development	The development path of the socio-economic Global North is inherently unsustainable. The global transfer of this path makes the time frame at hand for changing this path much shorter.	We urgently need to find an alternative path that is more equal and instantly rewarding for societies and the environment as a whole. So how do we create real capabilities for people to flourish in less materialistic ways without creating socio-economic chaos?
Time lag	In spite of our inability to predict an exact social and climate outcome, the inertia in the Climate System requires that completely new kinds of actions need to be taken decades before the actual full effects can be experienced.	This makes it hard for people to realize the magnitude of possible effects due to behaviours employed today or in the past. It also emphasizes our present inability to consciously promote preferred <i>disruptive</i> innovations. So how do we, in spite of this, both develop and communicate future opportunities?
Spatial gap	The geographical distance between where the problem is caused and where it's experienced distort local feedback loops.	This makes it hard for people to realize possible climate effects caused by their own local behaviours. So how can we connect local activities with far away experiences?

Table 1: Some statements and assumptions underpinning the challenges (adapted from Edeholt 2011).

Table 1 exhibits an interrelated system of what Otto Scharmer (2009) identifies as hyper-complexity by its: (1) dynamic complexity, in which cause and effect are distant in space and time; (2) social complexity, where conflicting interests, cultures and worldviews exists among diverse stakeholders; and (3) emergent complexity, defined by 'disruptive patterns of innovation and change in situations in which the future cannot be predicted and addressed by the patterns of the past' (O'Brien 2013).

From challenges to actions

O'Brien (2013) argues against a focus on possible solutions and call for a deeper understanding of the process of change instead. We agree with this view as long as one understands 'solutions' as **the** solution without considering the process of change it requires. But, arguably, design is in fact a process of change driven by series of *conjectural* solutions (Lawson 1997). That means that design uses solutions as an agent, or a tool, to facilitate change. Design's models, illustrations, scenarios etc. become sorts of boundary objects (Star 1989). They function to both facilitate trans-domain dialogue and provoke to new ways of thinking (Wood 2007). However this doesn't mean that designers have been especially aware of 'change' as a very special feature of design. Perhaps change, per se, have been taken too much for granted; or "[t]he parameters of change are assumed as given, as issuing from the client, thus they are circumscribed, delimited, not an issue" (Willis 2013).

Discussion

Especially the spatial gap and the time lag discussed above tend to be both inherently general in Climate Change and at the same time containing severe challenges for both design and its educations. As an example, below follows a brief discussion about how our project intends to address these two challenges:

Our take on the spatial gap

Based on the tradition of Industrial Design the project tries to build on the designer's training to come up with conjectural solutions that can facilitate a discourse about plausible future solutions. We have called those designerly "Discursive Elements". They are designed, to not only facilitate a local discourse, but also a global one between different nodes in both Global North and Global South. The initiative is organized in what we call a CC-MOOC program (Climate Change Massive Open Online Courses), where different design schools around the world bring in different modules as inter-related 'Discursive Elements'. These MOOCs should however not be understood as the sort of broadcasting MOOCs that recently have emerged. Instead the attempt is to be truly interactive in a more seminar like fashion.

By this approach we hope to be able to go beyond a mere aggregate of globally scattered local initiatives. As a consequence we also hope to go beyond the merely 'learning from each other feature' and really address the complicated global *relationship* that's so inherent in Climate Change. By organizing it in a MOOC framework we furthermore hope to eventually scale it all up to the global size the issue requires. The project partner from South Africa has since before both experience and expertise in conducting alternative forms of MOOCs.

Our take on the time lag

The Norwegian project partner has, on the other hand, developed a foresight methodology that utilizes design tools in order to construct future scenarios that can be back-casted to present time and

become what has been coined designerly 'Discursive Elements' for public creative democratic discourses. In these scenarios are social patterns, ways of living and possible technical solutions intermixed in ways that open up for a public dialogue about new approaches to live and prosper. The technologies explored in these scenarios and the subsequent solutions it contain are therefore not primarily evaluated for their direct feasibility but much more for their discursive qualities; i.e. the ability to create vivid, creative and politically dynamic opportunities for real change.

A non-conclusive conclusion

In hindsight; this paper argues that design today, in order to find radically new ways to 'change existing and forthcoming situations to preferred futures' (to paraphrase Herbert Simon), rather need to take a step back and develop from its old cores and roots, than base it on design's present features. Because, as Anne-Marie Willis (2013) argues, if design is to be a mean towards a radical change of direction "it cannot be understood and confined within its current forms. It has to change into a far more ambitious and intellectually informed practice". Willis might, in fact, be dead right when she continue; "design cannot remain stranded between humanities and sciences, turning this way and that, unsure of where it belongs. It has the capacity, still nascent, to leap over them, to become a futural epistemology" (Ibid).

This paper therefore suggests that a modified form of design urgently needs to be developed; a design that in an interdisciplinary manner brings design's unique competence, or even 'epistemology', to the common table of global climate concerns. In doing that we must dare to question contemporary espoused methods that seemingly become more and more local without any clear channel for neither distant nor future 'users' and 'stakeholders' to voice their concerns. Arguably, we also must (re)learn to be visionary beyond the next product release and whatever we intend to do, have to be designed with its ability to scale up in mind.

As a first step it is suggested that several interacting CC-MOOCs nodes are established at different design schools all over the globe. The goal for this is instrumental in three ways: (i) to develop a climate sensitive epistemology of design, (ii) to educate a new generation of climate sensitive designers and finally, and most important, (iii) facilitate a change of present climate change. The present research-funded project only involves two design schools, one in Norway and one South Africa. But, in order to scale it up further, discussions are also held with three other design schools; one in Brazil, one in India and one in China, and thereby involving four of the five fast growing BRICS countries (i.e. 'the BICS of the BRICS'). However other design schools are of course also more than welcome to join.

The intention with this paper is not to be conclusive. Instead the goal is to nurture a creative debate about urgent issues being necessary in, and beyond, all strands of design education. It is also based on a believe that a global organization like Cumulus, potentially, could play a very pivotal role in these our seemingly common efforts to join designers in both Global North and Global South to jointly address a climate change that eventually will affect us all.

Acknowledgement

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MY WATER, MY CHANGE: CONFRONTING GLOBAL WATER CONCERNS THROUGH CROSS-CULTURAL COLLABORATION

Denielle Emans

Virginia Commonwealth University Qatar

Kelly Murdoch-Kitt

Rochester Institute of Technology

Abstract

Water is vital to life; this is a simple fact, but human behaviors and relationships with water are increasingly complex. Designers at the undergraduate level should learn to confront the complexities of water scarcity and conservation, as well as how to discuss, explore and design for these issues in a global context. In response to this need, two design educators fused visual communication, international relations, and two geographically distinct graphic design courses to address the theme of water sustainability. Through an ongoing series of cross-cultural virtual collaborations between classrooms located in the Middle East and North America, students created interactive and experiential solutions to understand the ecological centrality and social importance of water. Students learned to work within teams to create new tools, approaches, and communication interventions with the goals of raising community awareness, educating, and/or changing behaviors regarding water use. As a product of the collaboration, exhibitions of the student projects in Doha, Qatar and Rochester, New York, USA delivered the poignant message that, regardless of a country's existing resources, drastic changes are needed to respond to the water crisis in a timely manner. This research contributes to a growing dialogue on the future of water across the globe, while advocating for increased opportunities for cross-cultural collaboration in the design classroom. The curriculum developed by the two lead faculty and its resulting design outcomes are presented to encourage continued creative innovation for environmental stewardship—an imperative that extends past the borders of region, country, or nation.

Keywords: *Water, Sustainability, Cross-Cultural, Virtual, Collaboration.*

Introduction

As global sustainability concerns become intertwined with the design field in professional practice and curriculum development, the need to engage in these issues through the lens of intercultural relations becomes increasingly important. Successful design solutions should carefully consider the culture and context of the intended audience while communicating across a spectrum of communities. The benefits of intercultural partnerships—such as sensitivity to other cultures and expanded problem-solving capabilities (Wang 2011:243)—can, therefore, become a productive component of design interventions aimed at addressing the planet's most precious and imperiled resources.

A concurrent examination of two heterogeneous cities and their distinct environmental challenges can provide cross-cultural partners fertile ground upon which to meet, research, discuss, and design for

global sustainability issues such as the water crisis. Suzanne Goldenburg from *The Guardian* states that, while “growing demands from agriculture, an expanding population, energy production and climate change” continue to threaten water supplies, “one in seven people on the planet lacks access to safe drinking water” (2014:np). In this regard, the cities of Doha (Qatar) and Rochester (New York, USA) offer ample opportunity for design students to jointly consider a spectrum of water issues within their two distinct locations.

Due to the scarcity of freshwater in Doha, almost all fresh-water is either imported as bottled water or provided through the municipal water supply as desalinated seawater (Momani 2006:589). Water consumption rates are of great concern in this arid desert region (Roudi-Fahimi, Creel & De Souza 2002:7), however, for both non-Qatari residents and Qatari citizens, the monetary costs of water are comparatively low. Although its geographic traits are drastically different, the cost of water is similarly low for Rochester residents. Rochester sits at the foot of the Great Lakes, which house approximately 21% of the world’s fresh water supply, according to the United States Environmental Protection Agency. At the same time, water quality should be of utmost concern for the Great Lakes as they hold around 84% of North America’s surface fresh water, but only 1% of the water flows out of them each year, which means that pollutants entering the lakes can become concentrated over time (EPA 2012:np). These drastically different cases illustrate the need for individuals, businesses, cities and countries to become more aware and judicious in their treatment and use of water resources.

Research framework

This study involved 19 total design students from two senior-level Graphic Design courses taught concurrently in Doha, Qatar and Rochester, New York, USA during the Spring 2014 semester. ‘Design for a Sustainable Future’ at Virginia Commonwealth University in Qatar encouraged a critically engaged application of design craft and design thinking to current and future societal challenges. The course examined how design can raise awareness about global and local water sustainability issues in a spatial and experiential context. Meanwhile, ‘Advanced Web & Interactive Design’ at Rochester Institute of Technology investigated design for user experience through a focus on human-centered research and a systemic view of designed products and services. Students in this course sought to leverage digital communication to raise awareness, build community, and change behaviors around water consumption.

Course methodology: water sustainability in design pedagogy

With water sustainability as a common thread, both courses prioritized engagement with local communities and environmental stewardship through the application of design thinking in a cross-cultural setting. Faculty encouraged discussions of water pertaining to the following areas: consumption, quality, availability, ecology, and culture. Identifying specific themes helped students dissect the complex topic and view its diverse facets. Initiating a broad approach to in-class discussions on the social and ecological centrality of water made the multilayered topic more approachable to participants. At the same time, the complexities of sustainability topics can often overwhelm or depress students. Therefore, future-forward thinking and concepts of ‘design for positive change’ were also fundamental to the learning objectives of the collaboration.

Students conducted primary and secondary research that involved conducting interviews, administering surveys, and creating personas to help them carefully consider their audience at all stages of the design process. An informal population analysis, incorporating statistics, local news

reports, and observations of consumer habits, also contributed to the learning process. Collaborative, generative design activities such as 'a day in the life with water' (Figure 1) and 'team intervention remix' (Figure 2) helped the intercultural teams build camaraderie as they envisioned behavioral shifts towards limited water resources. These explorations into personal habits with water—and their consequences—also helped students make informed judgments on how to best position their design interventions within their immediate communities.

Extensive research into a singular facet of the water crisis was instrumental in the development of some of the most successful projects. Upon narrowing the focus to one aspect of a larger issue, students began to dissect the advantages of 'design thinking' for environmental good with a series of prototypes and testing. Keeping project outcomes open within the course requirements encouraged communication between student teams and enabled compatible solutions to emerge across a variety of media. At the final stage of the investigation, a clear understanding of the target audience became invaluable for students to determine the most appropriate medium for their design intervention.

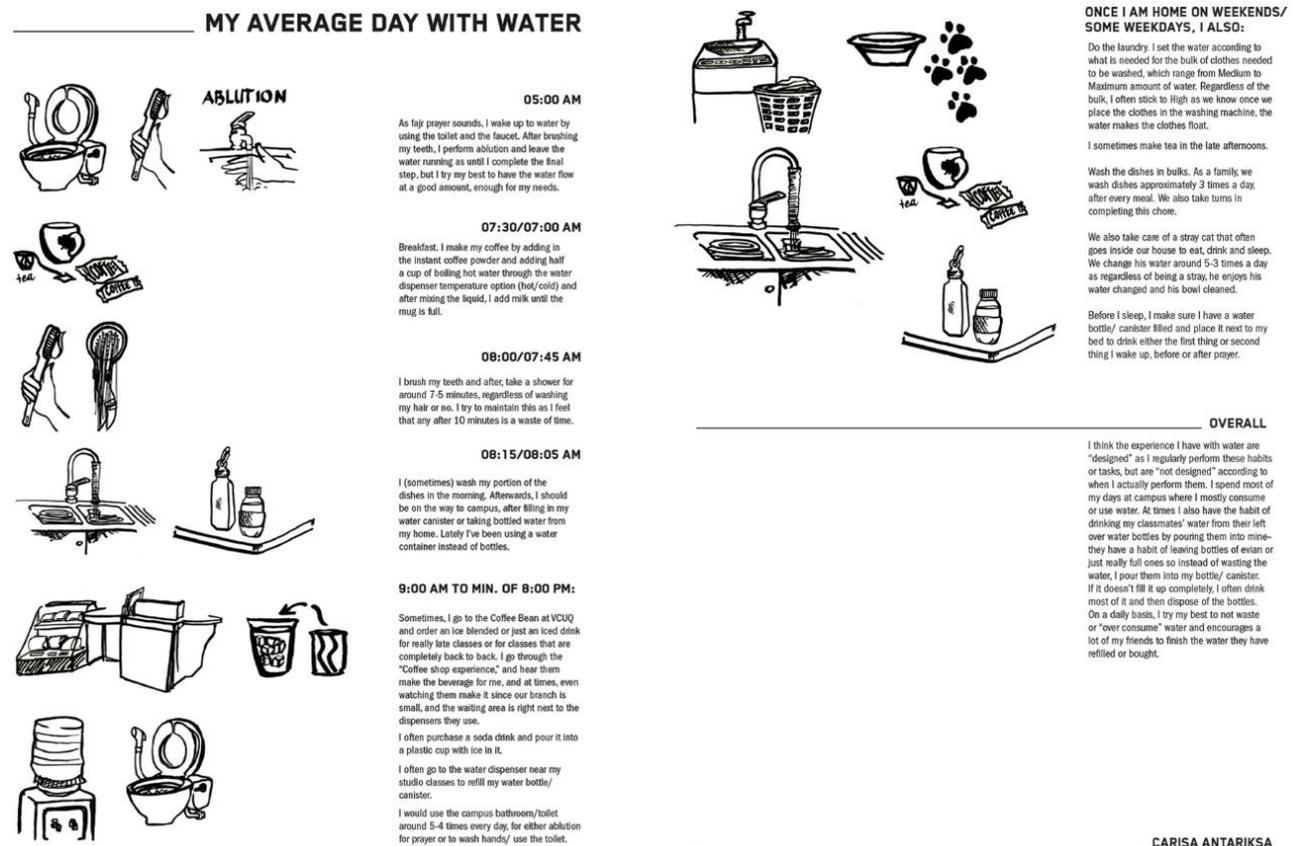


Figure 1: A day in the life with water activity, Carisa Antariksa (Doha)



Figure 2: Team interventions remix activity, Catherine Fe Calma Chiuco (Doha) in collaboration with Brittany Norton (Rochester)

Crossing virtual boundaries: cross-cultural partnerships

Collaboration with cross-cultural partners can help to broaden student perspectives on global trends and viewpoints embedded within their research. Previous iterations of virtual exchanges led by the two design educators encouraged freshman and sophomore-level design students to collaborate remotely, exchange ideas, and investigate possibilities of cross-cultural design. While these prior courses focused primarily on cultural learning (and exploring similarities and differences through design projects), introducing the theme of water sustainability gave the most recent group of partners an opportunity to connect through consideration of a topic of international concern.

In contrast to previous methods of creating cross-cultural teams between the two classes (e.g. by random selection or by matching complimentary personality traits), the instructors assembled cross-cultural pairings based on students' mutual interests in water subtopics. For instance, one partnership was built around the theme of *bottled plastic water*, exposing team members to each country's unique circumstances embedded within the subject. Initially, partners in Rochester could not understand why their counterparts in Doha were 'promoting' the use of bottled water, while they conversely focused on encouraging the use of tap water to minimize the use of disposable bottles and help reduce waste. The dialogue between the cross-cultural partners exposed Qatar's current reliance on bottled water as 'safe' drinking water, the public anxiety (and social stigma) around consuming desalinated tap water, and the use of plastic bottles as a concern wrapped in necessity.

Inasmuch as the Qatari students realized the value of reusable bottles filled from the five-gallon polycarbonate containers popular throughout the country, they also recognized the need to find positive uses for the smaller plastic containers provided at all restaurants as table water. The students,

consequently, developed an installation to teach children about the importance of recycling within an activity area dedicated to converting used water bottles into puppets (Figure 3). By engaging their imagination and creativity, participants learned about the importance of conserving water and reducing waste through play.



Figure 3: The “Water Warriors” installation gives children an opportunity to repurpose plastic water bottles that would otherwise be discarded (Lolwa Al Khater & Maryam A Al Kaabi, Doha)

Similarly intrigued by the topic of bottled water, the Rochester-based partner pondered its prevalence in her own city. Though Rochester has a plentiful supply of clean freshwater resources, many people still regularly purchase and consume large quantities of bottled water. The student saw this behavior as an opportunity for design intervention. After brainstorming and working through many different directions, including online quizzes and games that could be spread via social media, the student ultimately conceived of “Go Tap” as a result of discussions and design “remixes” with her partners in Doha (Figure 4). “Go Tap” is a campaign that promotes tap water consumption by engaging “kids of all ages” in an online art contest that promotes drinking water from the municipal supply.

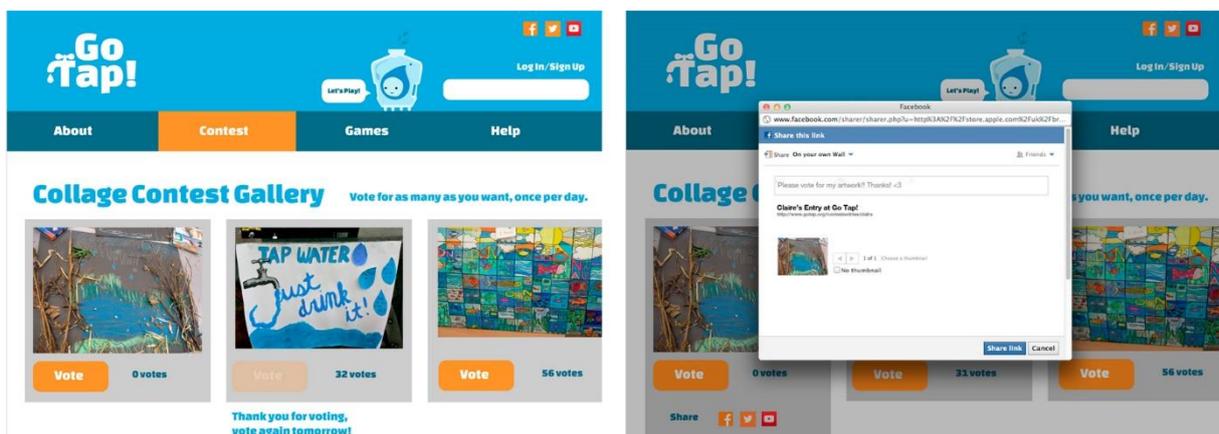


Figure 4: “Go Tap” website prototype encourages the community to submit, vote on and socially share artwork that encourages tap water consumption (Brianna Hanley, Rochester)

Inspired by cultural insights between water utility companies in the two cities, a pair of Doha-based students explored the lengthy and expensive process of desalination, a procedure that removes the salt content of water and requires the use of high-levels of energy for production. The local community is aware that this is the source of water in Qatar, but they are not aware of the delicate industrial process to produce clean water. The students created dimensional, wood cut panels, which created

an environment for digital animations. Together, the wooden “landscapes” and animated characters educated members of the Doha community about desalination and the energy it takes to produce a comparatively small amount of drinking water (Figure 5).

One of these students teamed up with a student in Rochester, who was interested in the idea of public and private control and consumption of resources. Inspired by the visual approach within her partner’s animation (mentioned above), she considered a variety of concepts that could potentially incorporate the characters. Eventually, she created a prototype for a game called Water Wars (Figure 6). As players construct and manage their own cities, the game teaches them about potential water-related conflicts based on the results of the choices they make for their model cities. Not only did the student incorporate an important learning opportunity into the engaging context of game play, but she also integrated her partners’ characters as avatars that represent the players.



Figure 5: “From Salt to Sweet” combines video-based animation that describes the desalination process with wooden models of the physical plant to help illustrate the complexity of desalination (Catherine Fe Calma Chiuco & Barbara Charrue, Doha)



Figure 6” The “Water Wars” game teaches players about the history and future of water’s sociopolitical connections as they manage simulated cities (Brittany Norton, Rochester)

Virtual tools: dialogue and critique

Synchronous and asynchronous virtual communication tools are powerful mechanisms for cross-cultural dialogue and critique. While managing time differences and expectations for fast correspondence is a persistent challenge, applications and platforms such as Google+ and Skype can be invaluable in maintaining fluid discussion across distances. The Designers Accord notes that in sustainability education,

the seamlessness and accessibility of these avenues of communication can provide a means by which conversation can continue outside the classroom. Social media provides a more casual and non-committal medium, and a method to brainstorm ideas and new possibilities for a project amongst all stakeholders and co-creators. (Designers Accord 2011:6)

In previous semesters, critique via email alone resulted in mixed success. Many students were unable to provide critical, constructive feedback for fear of overstepping cultural boundaries and unintentionally offending their partners. Students not only found it difficult to give in-depth feedback to one another, but the format did not enable faculty oversight to articulate expression and encourage critical analysis. However, the use of live video chat (such as Skype) enabled topics of cultural similarity and difference to emerge as students worked together to analyze audiences, discuss habits and behaviors, and consider the functional, social and symbolic roles of water in both countries.

Introductory Skype meetings between the geographically disparate design classrooms helped students become acquainted with one another in a relaxed atmosphere while increasing their excitement for forthcoming discussions in smaller groups. The integration of shared virtual spaces for collaboration (such as Google+) extended dialogues between the students in both public forums and one-on-one critique environments. Constructive dialogue between students accelerated the communication feedback loop, resulting in self-initiated commentary on the visuals posted by the other class.

As the collaboration progressed, the two professors encouraged increased analysis amongst the two classes and between partners. Virtual critiques between the instructors and the opposite class via Skype also added positive pressure to the classroom dynamic, holding students accountable for their own progress. Students in both classes appreciated hearing another instructor's perspective and indicated in their final course surveys that they found this feedback to be particularly instrumental to their project outcomes.

Public exhibitions: engaging the community

The final outcome of this pedagogic research was a series of public exhibitions of student design projects in both Doha and Rochester. The Doha class gave the inaugural exhibit the name "My Mai," an English/Arabic play on words meaning "My Water." While the course in Doha focused primarily on creating physical or interactive touch-points specifically for an exhibition context (using iPads, projections, and activity areas), the Rochester class proposed a range of interactive solutions (such as games, "smart" appliances, and how-to sites) geared toward educating and changing behaviors around water use. In both cities, the exhibitions illustrated the inherent complexity and systemic impacts of water sustainability as well as its inextricable relationship with human emotions and habits.

Using multiple formats, interactive media, and the elements of both 2D and 3D space, the Doha exhibition (Figure 7) and Rochester exhibition (Figure 8) highlighted issues of water scarcity and desalination through a series of designed experiences. Each installation centered on a different water-related theme and encouraged visitors to shift their excessive water consumption practices to more conservative ones. Through poetic and pragmatic approaches, the exhibitions delivered the poignant message that community involvement is needed to respond to the water crisis in a timely manner.



Figure 7: My Mai: My Water, My Change—Exhibition (April 8-10, 2014)
Saffron Hall, Virginia Commonwealth University in Qatar, Education City, Doha, Qatar



Figure 8: Gulf to Great Lakes—East/West Exhibition (May 14-21, 2014)
Imagine RIT: Innovation and Creativity Festival, Rochester Institute of Technology, Rochester, NY, USA

Exhibitions were also a meaningful stage in students' learning experience. Their significance to the collaboration cannot be overemphasized in terms of providing students with tangible goals to work toward as a team, motivating students to refine the work, and giving them opportunities to see the impacts of their designs in action and in the hands of actual users. Working toward the exhibitions not only strengthened relationships between the geographically distinct classrooms, but also amongst students within the same course as they put in extra hours to finalize their public displays.

Benefits and challenges: opportunities for improvement

Upon completion of the semester, students electively responded to project evaluation prompts to share feedback on the learning outcomes, cross-cultural collaboration, and sustainability knowledge. In addition to providing instructors with a qualitative measure of each student's experience, students also provided quantitative feedback regarding their learning outcomes and impressions of the course through completion of an optional online survey. Findings from both courses revealed an appreciation for the cross-cultural opportunity on a personal level, but also point to challenges in working together on a singular design project due to logistical difficulties in time zones, course schedules, and skill sets. Moreover, the course evaluations further suggest that students emerged from the intercultural opportunity with improved understanding of global water challenges (Figure 9), along with stronger skills in cultural collaboration (Figure 10) and virtual collaboration (Figure 11).

Knowledge of Global Sustainability Challenges

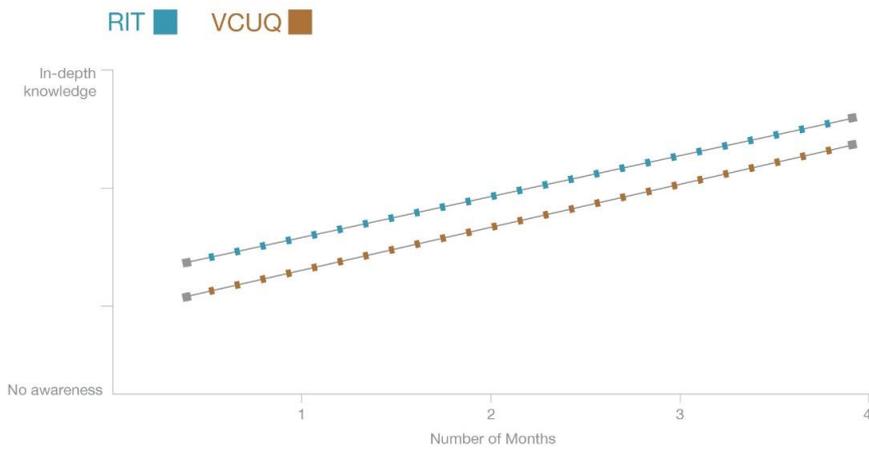


Figure 9: Students’ perceived knowledge of global sustainability challenges before and after the project.

Cultural Collaboration

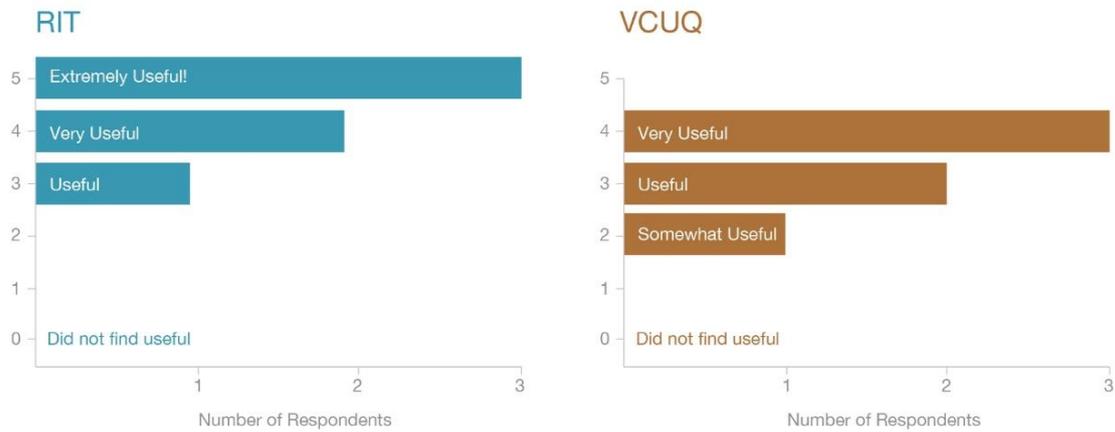


Figure 10: Students’ perceived improvement in cultural collaboration skills after the project on a scale of 1 to 5. The scale rates 5 as ‘extremely useful’ and 1 as ‘did not find useful.’

Virtual Collaboration

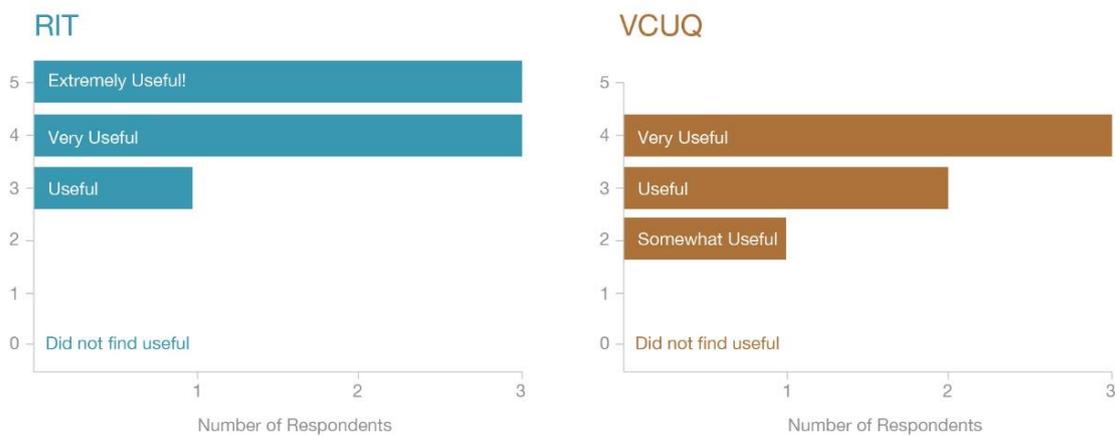


Figure 11: Students’ perceived improvement in virtual collaboration skills after the project on a scale of 1 to 5. The scale rates 5 as ‘extremely useful’ and 1 as ‘did not find useful.’

Although students in both courses cited their 7-hour time difference as a challenge, technology served as an important tool for improved synchronous and asynchronous communication between teams. Additionally, final exhibits at the end of the semester were a useful factor within the theoretical studio environments to motivate students to share the relevancy of their investigations. Future pedagogic research may benefit from identifying the impact of such design interventions in terms of behavior change of the exhibition audience in regards to water use. A participatory analysis of the cultural relevancy and social impact of the projects in both cities would strengthen the aforementioned outcomes, challenges, and opportunities for future projects.

Conclusions

The intent of this study was to promote collaboration and cross-cultural learning between design students located in North America and the Arabian Gulf Region to help improve water conservation practices at the individual and community levels. Findings indicate that working towards a common goal, such as water sustainability, helped bond partners together and gave participants a sense of purpose through mutual goals. The use of social media and class introductions via video-conferencing were equally beneficial in humanizing each class for the other, and building rapport and accountability between partners. Open project briefs encouraged students to communicate with each other to exchange, discuss and critique ideas and to work together toward compatible and supportive design interventions. In the end, helping students understand that a diverse team adds value—and that cultural differences offer promising opportunities for creative innovation—were paramount to the learning outcomes.

Findings of this study identified the positive effects of cross-cultural collaborations to address sustainability topics, and provide strong evidence of its benefits for design education. Evaluations indicate that learning to work with intercultural partners with different perspectives and values is beneficial in terms of developing critical thinking, leadership, and interpersonal skills for professional readiness. Findings also indicate that the nature of this collaboration also offers an opportunity to develop cultural sensitivity, investigate alternative design methodologies, and foster design innovation. Students who participate in cross-cultural exchanges around social initiatives can, therefore, emerge from academia as strong assets to the field of design and as engaged global citizens. Ultimately, the nature of this research underpins the need to support ongoing student-based initiatives that encourage synergistic partnerships across cultures to improve social design curricula and to extend these objectives in professional practice.

Acknowledgement

We would like to express our sincere thanks and appreciation to our students for their participation in this research.

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DESIGN ASSESSMENT: A SOCIALLY RESPONSIBLE PRACTICE OR SUBJECTIVE JUDGEMENT?

Susan Giloi

Midrand Graduate Institute and Rhodes University

Abstract

Based on an on-going PhD study situated in Higher Education, this paper draws on the knowledge theories of Basil Bernstein (1975, 1986, 1999) and analytical methodology of Karl Maton (2013) to consider whether knowledge or knower are valued at the various stages of graphic design assessment. Both knowledge and knower are valued in graphic design practice and education, however the emphasis between the two may shift and even clash in assessment. For studio based modules, the knowledge-knower structure described in the espoused assessment outcomes may differ from the applied criteria, and between those used in formative and summative assessment. Curricula, pedagogy and assessment communicate what is valued by a discipline, including specialized knowledge and the specialist knower attributes. Defining the knowledge-knower structure becomes critical to understanding how this potentially influences aspects such as assessment reliability and the privileging of certain groups of knowers over others. It has very direct implications for socially responsible assessment practice and for providing epistemic access to design education. Although the context of this paper is graphic design higher education, the concepts apply to other forms of design education.

Keywords: *Assessment, graphic design education, knowledge, knower, epistemic access.*

Introduction

Student numbers in South African Higher Education grew by 60% between 1996 and 2011 (MacGregor 2014), however the full effect of massification as experienced in other countries has not as yet been felt. By providing access to students from increasingly diverse backgrounds, Higher Education in South Africa plays an important role in righting the inequalities of the past through the opening up and democratizing of education (Hall & Symes 2005:199-212). There is in Higher Education an ever increasing emphasis on performance, meeting quality assurance and accreditation requirements and being accountable to various stakeholders including government, industry, students and parents. Performance is generally seen in terms of producing employable students who will contribute to the economy. Within this context, assessment and the linked pass and graduation rates are strongly linked to performance, not only for an individual student, but for a lecturer, course, degree, faculty, institution and country.

As a socially responsible practice within an Outcomes Based Education (OBE) framework, assessment and the criteria used should be transparent, valid, fair and reliable (Isaacs 2000:40). It is in the areas of transparency and reliability that the assessment of studio based design work is possibly the weakest. Reliability relates to two aspects, the first is that individual assessors make consistent judgments, even if the assessment takes place at a different time or place, and the second that the

judgments be consistent between different assessors (Morgan 2011:69-70). As assessment indicates what is valued within a discipline, what is being asked of students in terms of performance, outcomes and criteria should be transparent and open to all stakeholders.

Assessment is therefore a form of communication, as what is tested, offers clues to students regarding what is valued in a discipline. Curricula, teaching and assessment communicate the 'rules of the game' (Maton 2013) by highlighting the forms of knowledge that are valued and recognized in a discipline. Understanding how this communication is structured and what is valued, assists students with epistemic access, a phrase originally coined by Wally Morrow (Muller 2014). Epistemic access provides access to the powerful knowledge valued by the discipline and this is essential for student success. Maton describes powerful knowledge as "mastery of how different knowledges are brought together and changed" (2014:1). It is only with this powerful knowledge that students can adopt or reject the values of the discipline, judge or challenge quality and create new knowledge. Access to powerful knowledge is essential if design education is to produce socially responsible designers who are "leaders and innovators, rather than just followers and adopters" (Cadle 2009:34).

Assessment of practical design work

In graphic design (GD) education, assessments are often project based and usually takes the form of briefs. The briefs can be seen as a type of authentic assessment (Giloj & du Toit 2013:265) which mimic professional practice. Briefs may range from specific technical exercises in the early stages of a degree, to more open ended industry and socially relevant projects closer to graduation. Students are expected to arrive at creative solutions and each student may take a different approach when working on the same brief. This provides challenges for GD assessment within an OBE context, as explicitly stating learning outcomes and assessment criteria upfront is not possible. Arriving at a creative solution can be seen as an ideal standard to be achieved by students, but as Morgan (2011) points out, an understanding of creativity is subjective and not clearly observable. However a lack of explicit outcomes and criteria may result in students and other stakeholders perceiving art and design assessment as being subjective (Williams, Ostwald & Askland 2010) and tied to the assessors preference or taste (Rowe 2007; Belluigi 2009).

GD assessment is a complex social practice with some unusual characteristics. These include value judgments based on connoisseurship, where the assessor is expected to have a heightened sensitivity for what is valued within the discipline, and to apply this to the consideration of standards (Polanyi 1958). As standards and what is valued are often based on the tacit understanding of the assessor, these criteria are not always made explicit to the student (Morgan 2011). Panel or group marking is the norm in design assessment, where reaching agreement is important and often arrived at through negotiation and discussion (Orr 2007; Morgan 2011). However this may result in conflict, as what is being assessed may be called complex or 'wicked' achievements (Knight & Page 2007:1-78) and these may be embodied in person, process and product (de la Harpe, Peterson, Frankham, Zehner, Neale, Musgrave & McDermot 2009).

Although assessment of product and process are familiar to most design educators, the assessment of the design student as a professional design practitioner and a socially responsible and ethical designer and person, is also acknowledged. Through assessment, students are encouraged to think and act like designers and can align themselves with the practice of the discipline and its set of rules, or challenge them (Barrow 2006). Although the characteristics of design assessment highlight the

complexity of the practice, they may not reveal the underlying causes of subjectivity and the lack of assessment reliability. However making use of knowledge structuring theories when studying such complex social phenomena, may reveal the underlying mechanisms that influence inter assessor reliability.

The role of knowledge

Knowledge plays a significant role in Higher Education and disciplinary knowledge informs curriculum design and pedagogy (Muller 2008:1-28). The theories of Karl Maton (2007, 2010, 2013) based in part on the knowledge structuring theories of Basil Bernstein (1975, 1986, 1999) address the communication that occurs in education and who has the power to control it. In education, communication takes place within three fields. These are the fields of production, where new knowledge is established and distributed, for instance in journal articles. The second is the field of recontextualization where knowledge is 'translated' for use in education, often in the form of textbooks and curricula. The third is the field of reproduction, where knowledge is used in pedagogy and assessment (Maton 2013). The language used in these fields communicates the structuring of the knowledge valued within a discipline and who may make claim to this knowledge.

Maton's (2013) Legitimation Code Theory (LCT) specialization is a conceptual tool that has been used to analyse knowledge structures in diverse areas of education. It enables a fine grained description of disciplinary knowledge structures, especially in disciplines where knowledge is tacit and not clearly defined. Maton (2013) considers all disciplines to be composed of both legitimate knowledge and legitimate knowers. Specific disciplines will therefore consist of a combination of an 'epistemic relation', or knowledge, and a 'social relation', or knower (Maton 2013). The epistemic relation may be strong, represented as ER+, if the discipline has very clear and specific objects of study and procedures for studying them. For instance this would include the more technical fields of design such as engineering where certain specialist knowledge, methods and techniques are clearly identifiable as belonging to engineering. In a discipline with a weak epistemic relation, ER-, the knowledge, methods and techniques of the discipline are not explicitly defined. If the knower is valued in a discipline, it has a strong social relation, or SR+. This implies that the attributes and dispositions of the knower are critical to being able to recognize what is valued within the discipline, who you are is more important than what you know (Maton 2004). The knower must have the right set of attributes and sensibilities and these are often tacitly acquired through prolonged exposure to other knowers and the object of study. For SR-, or a weak social relation, the disposition of the knower is not significant, anyone can be trained in the disciplinary processes and procedures.

Combinations of these two dimensions, reveal the underlying logic of the discipline in terms of four specialization codes, that of knowledge, ER+ SR-, elite, ER+ SR+, knower, SR+ ER-, or relativist, ER- SR-, (Maton 2013). In Carvalho's (2010) study of four design disciplines, as illustrated in Figure 1, she found that in Fashion Design theoretical or propositional knowledge is not highly valued, whereas the knower is highly valued, making it a knower code. Engineering is a knowledge code where theoretical or conceptual knowledge is highly valued, but the disposition of the knower is not.

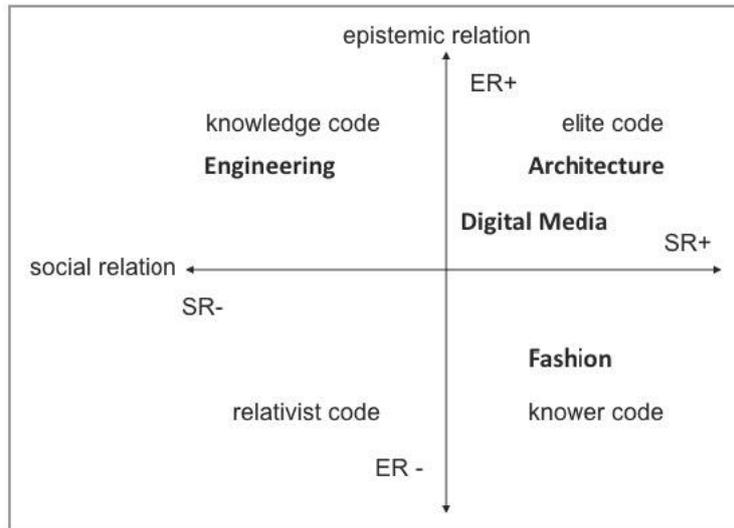


Figure 1 Legitimation Code Theory and the Design Disciplines (Carvalho 2010: 129)

The implications for design education is that a certain type of knower with certain tastes may be favoured and catered for (Dong, Maton & Carvalho 2014:483-502), while other groups are excluded from engaging with the knowledge valued in the discipline. In GD the knower must possess what Maton (2010:165) describes as a privileged ‘gaze’ in order to legitimately participate in the practice. The gaze is often expressed in phrases such as the student has a good eye, although the term talent is also used. Maton (2013) categorizes the knower as having four potential gazes; born, social, cultivated and trained, ranging from strong to weak. The strongest gaze is one that you must be born with, for instance if one believes in natural born talent, then only those born with talent will be recognized as knowers. The cultivated gaze can be acquired through prolonged emersion in the field, and exposure to other knowers and iconic works. This is very close to the traditional form of art and design pedagogy based on the master apprentice approach. However with large classes and an emphasis on efficiency, students have less one-on-one exposure to those who possess the gaze (Maton 2013).

Establishing a language to describe the epistemic relation and social relation for GD practice is challenging. Acquiring a gaze requires a combination of exposure to theory and practice, which may be explicit or tacit. For instance research for a design brief may make use of explicit knowledge from a number of disciplinary areas and the theoretical, historical and aesthetic background of GD is expected to inform practice, as it is critical to making value judgments. However theory is very seldom addressed in the design studio (Morgan 2011). There are highly technical processes and procedures that must be mastered including design software, hand-eye skills and an understanding of materials and production methods, all of which can be considered specialist GD knowledge.

The social relation in design requires connoisseurship in terms of being able to both ‘read’ and ‘write’ design (Steyn 2012:39). That is, being able to both judge and make. The aesthetic, production, ethical and professional decisions, may be based on tacit knowledge gained through emersion, practice, experience and exposure to case studies, design artefacts and the practice of iconic designers. Therefore separating the knower in GD practice, from knowledge, is difficult. Ultimately the role of the knower is to responsibly integrate the parts, consisting of theoretical and procedural knowledge into a creative whole. The valued gaze being a combination of explicit and tacit knowledge-knower is not

always clearly articulated to students and they are therefore not given the 'keys' to the powerful knowledge of the discipline.

Methodology and initial findings

For the case study of GD assessment which informs this paper, data has been gathered from study guides, an online questionnaire, the observation of individual and panel marking sessions and interviews with assessors. Study guides for each module are provided to students and lecturers on multiple campuses. These reflect the knowledge-knower structure espoused by the institution. Each guide contains outcomes, briefs with marking criteria, and a schedule. Modules that speak specifically to GD were selected from the first, second and third year levels.

The LCT specialization tool (Maton 2013) was used to uncover the knowledge-knower structure as espoused in the study guides and used by assessors at both the formative and summative assessment stages. At this time the coding and analysis of the data gathered is far from complete, therefore this paper contains initial thoughts based on the results of the questionnaire and the coding of the four study guides. The online questionnaire was completed by twenty nine lecturers and the questionnaire provides a broad picture of the knowledge and knower valued in GD. Initial indications, which are not based on a statistical analysis, reflect that lecturers value knowers more highly than knowledge. The ability to distinguish between good or bad design and integrate knowledge when creating a design was indicated as the most significant knower attributes. The least important attribute was having a distinctive personal style. The most valued knowledge was that of design, layout and typography and the least valued, the ability to conduct academic research.

The study guides appear to exhibit a similar pattern to that identified by Steyn (2012). At a first year level students are given briefs that are largely technical or knowledge oriented. The briefs have tight parameters and limitations and there is little expectation of students to apply a 'gaze'. At a third year level, both knowledge and knower are valued. The strong disciplinary knowledge relates to an emphasis on research, specialized design and production techniques and mastery of a range of styles. The student is given briefs that allow for choice, interpretation and unique solutions, thus requiring a greater use of the gaze to integrate knowledge. The Web Design module appears to be quite different to the print oriented module, as it indicates that knowledge is more highly valued than the knower. This may be because there is a strong focus on mastering complex processes and procedures, such as computer software and coding. However these forms of knowledge are not unique to GD. Mention is made in the guide of the importance of 'good web design', with comments such as 'but everyone is not a designer' implying that a specialized gaze *is* in fact needed. This communication indicates a potential conflict in the knowledge-knower structures espoused in the guide and what may actually be valued and used in assessment.

Conclusion

The research discussed above has significant implications for curriculum design and pedagogy, as well as for assessment. As opposed to focusing on the content of curriculum and assessment, the structure of knowledge-knower codes reveals the underlying message regarding what is valued within a discipline. The knowledge structure and the gaze valued in GD may privilege certain individuals or groups and unless it is clearly articulated and communicated, it potentially restricts epistemic access. Individuals who do not arrive at the institution with a feel for design, may be significantly disadvantaged by the lack of explicitness of the curriculum and assessment criteria. Thus making the

powerful knowledge inaccessible to them. If there are mismatches or clashes in knowledge-knower structures between the curriculum and the criteria used at various stages of assessment, then achieving assessment reliability in a multi-campus, multi-assessor context may not be possible. This implies that fairness may not be achieved and that design assessment might *not* be a socially responsible practice. However in revealing the knowledge-knower structure, the fundamental rules applied during assessment are revealed, making the underlying structure more open to scrutiny and analysis. Ultimately revealing the knowledge-knower structure for GD can inform improvements in curriculum design and assessment, thereby making the valued knowledge more open and accessible to diverse groups of students.

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DESIGN FOR DEVELOPMENT DISCOURSES AND NEOLIBERAL VALUES: DESIGNER, INNOVATION, COMMUNITY AND SUSTAINABILITY

Brenden Gray

University of Johannesburg

Abstract

Do the discursive positions in design for development discourse – design for social change, design thinking, human-centered design, participatory design – tacitly support and entrench a neo-liberal values? I frame this question by exploring three rhetorical tropes that I see at work in these positions: 1) values attached to figure of the designer as a “social actor” 2) narratives attached to notions of ‘innovation’ as a form of “social action”, 3) categories of ‘sustainability and community’ performing as “discursive legitimisations” (Van Leeuwen 2011). Using the tools of critical discourse analysis (Fairclough 2003, Wodak & Meyer 2012), I demonstrate how these tropes operate thematically in design for development texts drawing on a range of themes related to capitalism. I show that these tropes and themes are useful analytical lenses because they show the extent to which neoliberalism penetrates design discourses. I conclude briefly by asserting that design education must be able to equip graduates with the critical tools that will enable them to explore the relationship between neoliberalism and design.

Keywords: *design for development texts, neoliberal values, critical discourse analysis, community, innovation, sustainability, new capitalism.*

Introduction

Discourse is a place where relations of power are exercised and enacted (Fairclough 1989:43). Critical discourse analysis (CDA) is a useful tool in that it can reveal the extent to which neo-liberal values are encoded in design for development texts. I show, through a basic analysis of three specimen texts, how the sociolinguistic concepts of “social actor”, “social action” and the “construction of purpose and legitimisation” (Van Leeuwen 2011) can illuminate this encoding. I comment on how CDA, as an analytical framework, can assist educators to articulate how design’s relationship to capitalism and in particular, neoliberalism is represented in “instances of language use” (Fairclough 2008:11). This paper does not take up the more ambitious tasks of using empirical analysis to make broader empirical generalisations about the relationship between design for development practices and neoliberal values. Although this vital and necessary project for the design profession to undertake in the long term, I argue that a more urgent task is to provide design students with the appropriate analytical frameworks to critique neoliberalism and the extent to which it is embedded in their discourses.

What is neoliberalism?

Although neoliberalism is a polyvalent term (Jessop 2010:171) there is general agreement that it is an economic movement and political ideology (Jessop 2010, Birch & Mykhnenko 2010, Shaoul 2010, Harvey) sparked by key policy changes being made in advanced capitalist societies the 1970’s, ‘80’s and ‘90’s coinciding with the collapse of the so-called ‘communist’ states. Neoliberals espouse the

notion that capitalism is the economic system that best serves human interests. It contends that state policies driven by liberalisation, marketisation and privatisation (Birch & Mykhnenko 2010:1) are the most efficient means of “enabling human freedom” and “allocating resources across society” (Birch & Mykhnenko 2010:1). Neoliberalism therefore aims to bring the state and its monopolies under the control of the market assuming that this will facilitate the secure environments in which nations can compete (Hayek as cited by Harvey 2007:20). A cornerstone assumption is that such competition will naturally prompt social innovations that will benefit humanity as a whole through ‘economic development’ that is naturally seen as virtuous and “good” (Fairclough 2003: 55). It is therefore imperative, for the state *not* to intervene in the affairs of the market but rather to serve its needs by safeguarding individual, and especially commercial, liberties. Paradoxically the state must safeguard spontaneous “freedom” by enforcing strong private property rights (Mises 1962; Nozick 1974; Hayek 1979 as cited by Thorsen & Lie [sa]:13) in all areas of human life.

Neoliberalism thus assumes that the most effective and efficient way of organising human production and society is through corporate power facilitated by the state’s power to monopolise and regulate (Friedman 1962, Chomsky 1999). Given the emphasis placed on market values, neoliberalism reifies the entrepreneur who, in his drive to attract investment, make profits and to take risks (Friedman 1980) innovates for broader society, creates employment opportunities and facilitates growth. Given that entrepreneurship is seen as universal human potential (Schumpeter 1976), individual choice and freedom must be facilitated rather than constrained by the state in order to ensure the flourishing of commerce. Consequently, individuals are made solely responsible for the consequences of the choices and decisions they are said to freely make under capitalism. Neoliberals believe meritocratically that under these conditions, inequality and injustice, rather than being caused by historical circumstances or social systems, are the result of freely made individual decisions (Nozick 1974; Hayek 1976).

These are the core principles of idealist neoliberal theory (Harvey 2007:64). Critics have argued that in practice neoliberalism is an imperialist project that attempts to deal aggressively with the global capitalist crisis of surplus (Harvey 2013: 27-64). Neoliberalism constitutes an attempt on the part of global capital to “accumulate through dispossession” (Harvey 2007: 116) to bring the state under its control (Chomsky 2013: 34-40) so that the capitalist class can legitimately appropriate common and public resources for the benefit of the capitalist elite at the expense of the many (Harvey 2005: 91, 96). Specifically, neoliberalism may be characterised as a war waged by the capitalist class using the state as a shock weapon against the working class and all forms of social solidarity (Giroux 2008:112) in order to legitimately gut public resources (Klein 2008), undermine universal human rights, dominate political life (Manbiot 2004) and ultimately to reassert hegemonic control over labour. Culturally this means that “all forms of social solidarity [are] dissolved in favour of individualism, private property, personal responsibility, and family values” (Harvey 2005: 23).

Importantly, neoliberalism is not simply a coercive force or ‘capitalism with its gloves off’. It has strong symbolic and cultural dimensions too, using “powers of persuasion, co-optation, bribery, and threat to maintain the climate of consent necessary to perpetuate [capitalist] power” (Harvey 2005: 40). It is therefore a both an actual movement and a symbolic system imposing discursive effects upon the social world (Fairclough 2008:10 -11). Neoliberal discourses have thus given rise to new cultural formations such as “cultural capitalism” (Žižek 2010: 52, Sennett 2007) “corporate organisational culture” (du Gay 2006), reconfigured modernities (Bauman 2011), new intensities of labour

(Hochschild 2010), political and consumer identities (Standing 2011, Crompton 2003) as well as species of capital (Bourdieu as cited by Wacquant 1984:68). The assumptions that neoliberal theory makes and how these are rhetorically constructed are important questions in understanding the discursive effects of neoliberal practice and theory. These assumptions are conveniently summarised by Harvey (2007:64-67) as:

1. "Private enterprise and entrepreneurial initiative are [...] the keys to innovation [...]."
2. Innovation leads to "continuous increases in productivity [that] should then deliver higher living standards to all [given] the 'trickle down'" effect.
3. Public resources, provisions and assets (such as education, health) should be enclosed and privatised because this will instill values of competition which, in turn, will guarantee efficient management for the better good.
4. "While personal and individual freedom in the marketplace is guaranteed, each individual is held responsible and accountable for his or her own actions and well-being".
5. "Democracy is viewed", "with suspicion", "as a luxury, only possible under conditions of relative affluence". Executive decision-making by "experts and elites" is therefore a preferred mode of governance.

Critical discourse analysis and design texts

CD analysts employ socially relevant "semiotic points of entry" (Fairclough 2009:168) to make decisions about what sample texts to analyse. Texts related to media, policy and political arenas have been the subjects of numerous studies in CDA (Machin & Van Leeuwen 2007) however studies of design texts are notably absent despite the profession's importance in creating value in advanced capitalist societies. Although other analytical frameworks are useful in understanding the ideological orientations of design practices, language studies (Block, Gray & Holborow 2012 et al) are a powerful means to decode design texts.

The study of language can be a powerful tool in articulating the operations of ideology (Fairclough 1995). For Van Leeuwen (2011), time, space, actor, action and purpose play a critical role in how texts represent ideology and enact social change and agency. These aspects are key to understanding neoliberalism because it is a theory that essentially attempts to legitimise itself as a model of social change and human agency. I have selected the three aspects from Van Leeuwen that best deal with the construction of agency, that being: "representing social actors" (Van Leeuwen 2011:23-54), "representing social action" (Van Leeuwen 2011: 55-74), "the discursive construction of legitimacy [and purpose]" (Van Leeuwen 2011: 104-135). I thus ask questions in the selected sample texts such as: how is the designer as an actor represented in the sampled text in relation to other social actors? How are multiple social actions related to the activity of design represented in the sampled text? How does the sampled text construct the purpose and legitimisation of social action? I have selected below a set of operationalising, representational texts have been selected for the purpose of this study because of they often best exemplify the extent to which values are naturalised in practice within the categories of 'design for social change', 'design thinking'/'human-centered design', and 'participatory design'.

Specimen 1. Designer as social actor: the community cooker, the designer and his community

The first specimen is a project profile about the “Community Cooker” an object designed by architect, Jim Archer. It appears in the book *Design with the Other 90%: Cities a compilation sixty socially engaged design projects from the developing world that link the “formal and informal city”* (Moggridge 2011:4). The book aims to explore, like the 2007 Smithsonian’s Cooper-Hewitt National Design Museum exhibition upon which it is based, “the critical issue of poverty [...], how designers are developing solutions to meet the needs of underserved communities around the world” (Moggridge 2011:5). The publication advocates that designers, rather than simply serving the “10% of the world’s population that can afford their goods and services” (McCarty 2011: 9) should work “with” the “underserved”, “other 90%”. The featured projects also highlight design projects that show a reciprocal relationship between designers local and communities. It thus celebrates “the extraordinary capacity of people to innovate” (McCarty 2011:9). Below is the specimen that I will be examining from the perspective of representing social actors:

The majority of Kenya’s forty million inhabitants use wood and charcoal fires for cooking. These fires cause respiratory diseases, contribute to greenhouse gases, and denude local forests and scrublands. One alternative is the Community Cooker (Jiko ya jamii in Swahili), a communal oven that uses trash as fuel for the Laini Saba community in Nairobi’s Kibera informal settlement.

In the mid-1990’s, Nairobi-based architect Jim Archer was increasingly concerned about the amount of discarded refuse piling up in Kenya and many other developing countries. He designed the Community Cooker as a simple, inexpensive machine, easily built and repaired by local communities, with minimal operating expenses. It is described as “cash-free heat”: residents collect, transport, or sort the trash in exchange for time cooking or heating or distilling water”. Others pay five Kenyan shillings (about six cents)- less than the cost of kerosene or charcoal- to use the cooker. Under the management of the community-based organisation Ushirika wa Usafi (“corporation of cleanliness”), the trash is sorted into racks, dried and shoveled down a slide into the burn box (Smith & Lipps 2011:184).

On the face of it, the passage is simply ‘showing’ the health and environmental benefits of a cooker to an economically depressed community. The text presents two sets of participants- the individual, elevated designer and a set of ‘other’ participants are grouped under the signifier ‘Kenyan’. The designer seems to be mythologised and reified in this passage. Archer is activated (he is an actor) and the ‘other’ participants; the “inhabitants” are passivated as goals. The “residents”, “community”, “others” are activated but only in so far as they are reacting to the designers actions via the community cooker. In contrast to the designer, they are therefore presented as possessing low levels of intentionality.

The passage suppresses naming the population (of which the Laini Sabi is an instance) as problematic. The vague term “community” is motivated instead of more accurate designations such as ‘the unemployed’, ‘poverty stricken’, ‘rural peasantry’, ‘shack dwellers’. Similarly, the passage does not overtly name the socioeconomic global actors (debt, World Bank, neo-colonialism, unfair trade policies) that lead to informal settlements, wage less populations, inadequate provision of services and environmental degradation. If the narrative suppresses mention of these bigger, global actors it also refuses to attribute to the “Kenyan majority” either causality or intentionality which means that the community cannot be granted status here as an active political subject nor as a victim of political ideology. Although it is implied, the “inhabitants” themselves and their decisions are not put forward as the cause of “disease”, “greenhouse gases” and ecological degradation although, in principle, these

problems can be attributed to human action. This attribution would be too patronising. Rather blame is assigned to their cooking and fires. The passage therefore substitutes a human problem with a depersonalised 'situation' (in which 'the community' is implicated). Indeed a non-human actor, "thing" (Latour as cited by Bjögvinnsson, Ehn & Hillgren 2012:102), in this instance the cooker, is proffered as the solution suggesting that the health and environmental problems it posits need a technical rather than a political solution. Hence an object is personified in this passage as having agency where to a high degree the Kenyans are deactivated, reactivated and depoliticised

Only the designer is attributed with a high degree of intentionality and is accorded high levels of semiotic specificity in the passage. He is identified, individualised, specified, role-allocated, highly differentiated and ultimately personalised where the goal of his action, the 'community', is presented as assemblage of confluences and genericised. Interestingly, Jim Archer's actions are cognitive. He is ethically "concerned", "designs" in contrast to the other actors whose reactions are physical, material. The cooker itself is accorded agency appearing almost as a protagonist in the passage. The cooker is presented as more than a mere commodity. Rather, represented as a means of production (in Marx's sense) it instantiates the aggregated community as an outcome of successful capitalist relations. Note how the depiction of the beneficiaries of the design transform from having low agency to having full agency as they engage with the cooker. The Kenyan "majority", transforms semiotically to "inhabitant" to "community", "resident", "people", "organisation", "corporation". The ultimate outcome of all of the social action is a new form of social organisation, "the corporation of cleanliness". The passage seems to imply in this that it is only through the philanthropic promulgation of capitalist means of production can communities autonomously solve their problems. This means adhering to neoliberal, entrepreneurial definitions of responsibility that, it is implied, will humanise the community.

Specimen 2. Innovation as social action: IDEO and the impersonal imperative for designers to empathise

The specimen below is extracted from "Empathy on the Edge", an advocacy essay written by Katja Battarbee, Jane Fulton Suri, and Suzanne Gibbs Howard (2010). It promotes the power of empathy in IDEO's design approach. IDEO is an international consulting and design company known for advocating design thinking as a methodology in solving complex organisational problems. In the section of the document where the passage below is found, 'Designing for Increasingly Complex Systems', Battarbee argues that, given the changing conditions of the world designers must now design with empathy. This, she suggests, naturally leads to the incorporation of ethical and impact issues in the design process. The specimen below will be examining from the perspective of *representing social action*:

This work [John Stoddard's engagement with fishermen] has inspired us to find ways to apply empathy in new contexts. Some of those contexts have arisen from shifts in how people relate to one another and the world. Advances in information and communication technologies alter how we work, play, learn, socialise, and express ourselves. Consumers' relationships with, and expectations of, companies are changing. Businesses worldwide are being held increasingly accountable for their long-term social and environmental impacts. This is driving many firms to adopt new policies and practices around energy conservation, sourcing, production, and sustainability. Products and services were never designed in a vacuum, but now everything is more evidently connected as part of a larger ecosystem. To succeed today, an ever-greater number of stakeholders must be considered during the design process. We, as designers, have also changed how we think of success and impact. Success is not

judged solely within the span of a project or product launch (Battarbee, K Fulton Suri, J & Gibbs Howard, S 2010: 2).

The changing world theme and notions of impact and responsibility are common in design discourse. In the West, the profession of design has historically associated with and associated itself with the utopian drives and projects (Margolin 1998). What is at stake in texts dealing with change, futurity and social action? As Fairclough (2006:40-47) recognises, in his critique of globalist discourse, the representation of change is a highly politicised because whether change is construed as “given” or controllable, or the causes of change are depicted as ontologically true or false, determines, in terms of social action, what gets done and what does not. Given this, explanations of change strongly determine who is legitimately accorded with the authority to act.

How are these issues of action and authority dealt with in this passage and how does this link to neoliberal values? Empathising is a semiotic, cognitive-affective, low modality and non-transactive social action. It is an action without a goal and as such it is one that is politically neutral. Ironically, this passage makes a strong call for designers to engage in what is a materially weak action. Although this passage is saturated with evocative, high modality, directive verbs, it nominalises throughout. Grammatically, it uses intransitive verbs – “businesses worldwide are being held accountable” – to represent could have been more clearly articulated as transactive actions. In a transactive sentence we would be told who is holding businesses to account: for example, ‘businesses are being held accountable by the courts’. Intransitive statements such as these are expressed in order to nominalise further transitive actions: “this is driving many firms” which in turn legitimises the assertion that all ‘stakeholders must be considered’. As readers, we are not sure what this refers to. Despite the chain of actions presented in the passage, the original agent causing these actions is nowhere to be found so action comes to be eventuated. Furthermore nowhere is an actual human actor, individual or group accorded with the capacity for action. This means that the human causes of change are suppressed and obfuscated through nominalisation, although the reality of the change and the causes of change are strongly presented with “high epistemic modality” as given (Fairclough 2006:56).

What the passage presents as ‘given’ are the impersonal global forces that will ironically legitimise the new ‘empathetic’ orientation of the contemporary designer. These are the primary actors in the passage. This is achieved through nominalised actions that function as the subject or object of the clause” where the main verb is displaced into a subject word group. For instance we are told that “advances in information and communication technologies”, “alter how we work, play, learn, socialise and express ourselves”. Ostensibly, this suggests that the productive forces of capitalism are presented as givens. These “advances”, although not human, are presented as powerful agents in their own right. Forces out of our control are therefore presented as having high levels of intentionality, able to direct on an intimate level what are intrinsic human qualities like the designer’s capacity to empathise. Most of the statements in this passage are also de-agentialised. Sentences either do not attribute action to human agency or they present “processes without agents” (Fairclough 2006:44). For example, it is proclaimed that “products and services were never designed in a vacuum” without specifying who designed them. Notably, the passage also contains many non-transactive sentences, statements without objects. “To succeed today”, for example does not indicate what will be succeeded. Actions are left unspecified and undirected so that they sit in a relational field so that responsibility cannot be assigned.

Semantically, the passage places a high degree of emphasis on market-like and globalised forces and uses the language of commerce to make its ontological claims about the imperative to empathise. The passage calls for forms corporate responsibility and accountability but does not indicate what agencies are calling for this accountability, for example activists, governments, civil society, meaning that there is no way that the market itself, as the main cause of new empathetic attitudes, can be held accountable. The de-personalisation suggests that the passage sees the market as a natural and given dynamic that shapes the agency of the designer rather for example his/her conscience, social class, habitus, political membership or personal principles. Ultimately designers are cast here as servants of the market responding personally to impersonal market forces – acting as emotional labourers Hochschild (2005, 2012) in market culture. The emphasis on empathy, a non-transactional, cognitive process means that designers must merely change their attitudes rather than their actual practices. The passage is at pains, it seems, not to specify what social actions these new empathetic attitudes would give rise to.

Specimen 3. Sustainability, community and legitimisation: participation as a by-product of corporate interests

The third and final specimen is a magazine article entitled ‘Design With Intent: How Designers Can Influence Behavior’ written by Robert Fabricant (2014) the then vice president of creative of Frog Design. The article appeared in Design Mind magazine, published in 2014 by Frog Design, a leading, global innovation firm. The text is a form of “normative argumentation”, making claims “about what should not happen and or what should not be done” (Fairclough 2006:42) and thus is an appropriate site for the examination of the construction of purpose and legitimisation. The extract below presents two cases (the work of design researcher Jan Chipchase/designer Jennifer van der Meer and Frog’s Project Masiluleke) of what the author considers to be “catalyst” design. He considers this to be superior to user-centered design and persuasion design as an approach because it makes a more “immediate impact through direct social engagement” (Fabricant 2014 [sp]). Below are two specimens that I will be examining from the perspective of purpose and legitimisation:

Chipchase uses posters, events, and prizes to attract as large a cross section of the community as he can. In the process, he creates a network of influence, and the result is a type of social cohesion that builds community consensus around the idea of exploring new possibilities and embracing new futures. Yes, one of the objectives of these activities is to inform the design of Nokia’s products and services. But that may take years to realise. In the meantime, Chipchase achieves a more immediate and direct impact in the community through a change in mindset. He’s creating fertile ground for new social practices to emerge — in this case around mobile technologies (Fabricant 2014 [sp]).

How does this passage construct purpose or the goal of social action? Van Leeuwen (2011:127-135) identifies three kinds of purposeful action: goal-oriented (actions that are made purposeful because they realise set, predetermined goals), means-oriented (actions that are purposeful because they are meaningful in-and-of themselves) and effective action (actions that become valuable because of the outcomes that they create). These actions are constructed through the use of lexical signs such as ‘in order to’, ‘by’, ‘as’, and syntactically through commas, semi-colons and lexically through words such as ‘result’, ‘achieves’ and sometimes through the use of conjunctions. Purpose is important because the “discursive distribution of purposefulness has everything to do with the distribution of power in concrete social practices” (Van Leeuwen 2011:135) such as who has the competence to act with

rationality, intentionality and agency. Interestingly, purpose is important because it also assigns responsibility to social actors?

How are actors and actions given purpose and responsibility in this passage and do these relate to neoliberal values? There are three sets of actors portrayed in the above passage: the community, the design researcher/design expert and the corporation. In theory, the passage promotes non-normative forms of agency. The community are not framed as needy beneficiaries/patients as they typically are in texts dealing with socially responsible design. Moreover, the designer is not depicted as the agent/provider, an idea, which the author clearly sees as problematic. Fabricant is at pains to show that socially engaged design must not be goal-oriented as is the case with user-centered design but achieve more democratic and indeterminate ends through an emphasis on process, or means-oriented action. In texts such as these, and others promoting participatory design practices the purposiveness of *designer's goals* are underplayed in favour of means and indeterminate effects of multiple stakeholders involved actively in the design process (Robertson & Simonsen 2012:4).

However, looking at the passage grammatically reveals the opposite trend. The community, although represented as having purpose in terms of means-oriented action it is refused purpose at the level of goals. Grammatically, the community is subordinated to the designer and the Nokia corporation. The designer engages in a direct material action that is goal-oriented. Chipchase 'uses posters', 'attracts', engages in actions that lead "to", that "realise" and those that have "results". The results of his actions are extensive and goal-oriented. He "builds" "cohesion" and "consensus". Despite the author's claims to the contrary – that participatory design distributes power in the design process – the community are not described as being responsible for these outcomes which must be traced back to the expert designer. The community reacts to the designer's goals but these reactions are not directed. By responding to the catalysts provided by the designer they are granted, as beneficiaries, the non-directive capacities to "explore", "embrace", "emerge". The long-term goal that prompts all of the social action to be found in this passage originates in the need "to inform the design of Nokia's products and services" and not in the desire to address the needs of the community itself, the latter of which is simply framed as a value-add benefit to a corporate community engagement endeavour. "New social practices" are put forward as an unintended effect of catalyst design but the nature and value of these practices nor their newness are not elaborated in the article itself. Although backgrounded semantically, the passage suggests that real purposive activity and power is to be found in corporate interests. However, to soften presenting corporate interests as the main concern of the article their actions are delegated to the expert designer who acts as an intermediary participant (Kress & Van Leeuwen 2006: 116) and imaginary stand-in. Although delegated the passage gives the designer high status as "a social actor whose actions are explicitly constructed as purposeful". Grammatically, he is "discursively empowered as an intentional agent" (Van Leeuwen 2011:127) even if Fabricant's concept of catalysis suggests that the designer is not entirely responsible for the outcomes of his actions.

Sustainability, like the concept of community, is a powerful legitimising frame in both design and neoliberal discourses. Typically, in operationalising texts, legitimisation is drawn on as a strategy to win consent. By setting up moralistic frames and associations to beliefs, values and norms texts can imbue concepts with the authority that they might not otherwise possess if subjected to logic, evidence and critical scrutiny. Semiotically, open or 'slippery' concepts such as sustainability are useful because they can operate as a ciphers. 'Sustainability' can draw into and around itself a variety of

legitimising constructs. For example, in the passage below, from the same article by Fabricant, an attempt is made to legitimise the sustainability work of Frog Design through appeals to scientificity, social progress and technological innovation.

At frog, we saw firsthand how design can catalyze local change with Project Masiluleke, an effort to combat the high rate of HIV infections in South Africa through the use of mobile technologies. During the design process, we recruited young men in different communities in South Africa to help shape a new solution to HIV self-testing and by doing so did more than choreograph a better testing experience. We designed a system of participation. And as we've seen in past design research activities, participation breeds enthusiasm, action, and influence — in this case, a greater willingness to even consider the possibility of HIV testing (particularly among men who have never been tested despite infection rates approaching 40 percent in some regions). Also, in South Africa, where there is 90 per cent mobile device penetration, ideas spread quickly when a small community of individuals is actively engaged. You can easily imagine this influence magnified through mobile services like TweetLuck, TweetsGiving, and foursquare — or MXit, in the case of rural South Africa. In this model, influence emerges directly from the design process itself and quickly spreads through social channels. New possibilities are created in the community long before any new products and services can be developed (Fabricant 2014 [sp]).

At first glance this text is descriptive. It is simply presenting Project Masiluleke, a design and research project that attempts to provide mobile technologies and platforms in an effort to encourage young, males in local South African communities to self-test for HIV. Nonetheless, there are a number of lexical indicators in the passage that suggest that there is also a need to legitimise Project Masiluleke registered in the inclusion of words and word groups such as “an effort to”, “by doing so”, “as we've seen”, “even”, “despite”, “also”.

In contrast to earlier paragraphs, the author chooses to switch to first person now identifying himself directly with Project Masiluleke as was not the case with the Chipchase extract. The author's epistemological commitment to the in the project is show through experiential, empirical experience: we/he “saw” “firsthand”. Beyond the assertion of empirical validity – a form of rationalisation – the passage does not in fact provide any evidence, such as metrics, statistics and testimonials to support the validity of Project Masiluleke as more or less socially engaged than other projects. Rather, it simply describes the project itself and gives the reader some related 'facts'. In the process, it uses a range of metaphorical associations to legitimise its key claim that catalyst design encourages better forms of participation and social engagement than user-centered design or persuasion design. These include appeals to progressivism: “new”, “better”, “greater”, “quickly”, “new possibilities” and most interestingly appeals to militaristic and biological metaphors: “combat”, “recruited”, “breeds”, “magnified”, “quickly spreads”. In its attempt to lodge moral authority in the experience of the designer, science and technology the actual participants are sidelined. This is strange because the passage is centrally about the importance of community participation. It accords virtually no legitimacy to the people it portends are its main co-creators – the “young men” – which entirely contradicts the thrust of the article.

It is asserted that “we recruited young men in different communities in South Africa to help shape a new solution to HIV self-testing” and thus “that we designed a system of participation” where people were “actively engaged” but no indication is given as to who this “we” is (does that include the young

men?) and gives no indication as to how the young men contributed to the “shaping of a new solution” nor in what sense the unnamed participants were “actively engaged”. On its own terms, the community is not referenced as a source of power nor legitimacy in this passage. However, this is not true of the “mobile services” that are directly named – “TweetLuck, TweetsGiving, and foursquare or MXit” – as agents with a capacity to “magnify” the power of design and communication. If anything, the ‘community’ is represented passively, as organism or system, as indicated by the biological metaphors it employs. The community is a body that is acted upon by technological innovations. It responds to “catalysts” developed by designers. In this sense, the community is both as a passive and needy organism. The community’s human needs on their own (dignity, respect, motivations and so on) are not enough to sustain the reasons why designers should solve problems in the first place. Their needs must be deferred to expert, external, extrinsic agencies of authority – mobile device providers and designers, suggesting that the text is in fact promulgating non-democratic forms of engagement.

Conclusion, the power of discourse in design education

Design as a profession has always been enmeshed in the contradictions of capitalist production and associated ideologies. Under the conditions of neoliberalism, the dominance of capitalism and its internal contradictions the terms of this enmeshment have intensified. It is remarkable that the emergence of new approaches to design -socially responsible design, design for social change, design thinking, human centered design, participatory and user centered design – has coincided with the global ascendance of neoliberalism (1970’s to present day). Each approach attempts in radically different ways, to respond to the critical contradictions intrinsic to capitalism. The question is: to what extent have neoliberal values grown into and coopted these design approaches? I have shown in my analysis that the selected specimens strongly reference neoliberal values. Understanding how these values impinge on design discourses broadly and upon actual design practices means going beyond the analysis of instances of discourse. It requires a more in-depth empirical approach understanding how designers work in practical situations and how discourses affect and frame their work. Discourses are not self-contained or simply of academic interest. They “are [actively] translated into social relations, forms of power, rituals and institutions, beliefs and values and desires and material practices” (Fairclough 2008:34). Given this it is critical that educators make students aware that discourses count. They are constitutive and causative, “transforming practice” (Van Leeuwen 2011:5). Are design educators transmitting neoliberal values to students through the discourses they use or are they providing them with analytical tools that are required to critique and dislodge the powerful forces at work in professional discourses?

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THE TETLEY FEAST: A COMMUNITY-ENGAGED PARTICIPATORY DESIGN PROJECT

Sharon Hooper

Leeds College of Art

Marianne Springham

Leeds College of Art

Abstract

Against the current drive in the UK for Higher Education Institutions to operate in a global arena, The Tetley Feast connected some of the local, multi-cultural communities and different classes within Leeds, a city in the North of England, through social design practice. The project focused on community-engagement and participation between undergraduate students at a specialist art college and community groups situated on the opposite side of the city in a disadvantaged area. Elitism in formal art education automatically excludes marginalised people, and educational exclusion has been linked to social exclusion and poverty (Quality Improvement Agency, 2012). South Leeds has a growing population and a rich network of community organisations who provide specific services designed to target inequality. An awareness of this professionalism from their own experience of working in community arts, two lecturers realised students could both benefit from this knowledge and contribute their own design knowledge in a joint effort to effect social change. Students worked in small peer groups and were partnered with a community organisation. They spent the duration of the project working together to develop relationships. Students responded to the needs of the group to create a variety of visual and other work, with the emphasis to develop core skills central to social design, such as transferable liberal arts skills, as well as to value other forms of success beyond fame and fortune, and to value other people. The project embraced new technology and social media to expand notions of community and, as a whole, it gave students a broader world view. It also aimed to create a transformative dialogic learning experience for all. The Tetley Feast was a collaborative, practice-based research project and this paper reports as a case study that encompasses methods of design education as social practice.

Keywords: *Community-engagement, participatory design, design education*

Introduction

'The Tetley Feast' was a community-engaged participatory design project, which took place during a six-week period in January and February 2014. It involved 70 undergraduate students from BA (Hons.) Visual Communication (Viscom) at Leeds College of Art (LCA) in the north of England working together with community organisations located in a different area of the city. The Tetley Feast was a feast of ideas which led to the participatory production of visual work, and which culminated in a celebratory event. This event occurred within a host building, The Tetley, a new contemporary arts centre situated in South Leeds, the same area as the community groups. Previously this was home to the Tetley brewery, at one time an employer of people in the area and well-known landmark. In contrast to the location of both the art college and most of its students in more affluent areas of the

city, South Leeds is an area geographically, economically and culturally deprived. It therefore follows that people there are, in the main, excluded from design practices and education (Armitage et al., 2003, p.67). It has high levels of empty housing, lack of opportunity, unemployment and children living in poverty. The community groups working there are vital and have a wealth of professional knowledge and experience providing support to local people.

During the Tetley Feast project, students worked with: schools and informal education providers, Hamara (an Asian health centre), a youth club, a group of adults with learning and/or physical disabilities, a single dads group, and a mental health organisation working with women from the Polish and Bangladeshi communities. These established groups were approached because, like Viscom at Leeds College of Art, they want to make a positive contribution to society. The project is based around the Viscom commitment to making the world a better place. "We ask our students to use their visual skills to engage with social issues and, wherever possible, work on projects which effect real social change" (LCA 2014). The project also originated from the experience of two Viscom lecturers, themselves community practitioners, who had previously worked with and recognised the value of these specialist organisations in South Leeds. As a multi-disciplined course, Viscom values real-world application of design and social skills. Students working on the project were given an ideal opportunity to learn outside of the studio and apply theoretical and visual skills to specific professional contexts.

Aims

In contradiction to the current trend towards 'internationalisation' in Higher Education in the United Kingdom, and especially the conflation of this term with 'marketisation' (Caruna and Spurling 2007), the Tetley Feast connected students with some of the multi-cultural communities and different classes within Leeds. One of the main aims of the project was to promote positive engagement that would lead to sustainable long-term relationships. It was important that these were dialogic and people created learning opportunities together. The other main aim was to encourage students to value process over outcome and this was reflected within the Learning Outcomes of both First and Second Year modules, with assessment criteria focusing on the development of professional and collaborative skills. Learning from the experience of engaging with others was crucial to this. Students' ideas and visual work aimed to improve the visual representation and visibility of the community groups and had to focus on the needs of others. This was achieved through listening, observing, negotiating and interacting. Influenced by Lave & Wenger's ideas around communities of practice being groups of people who share a concern and participate in a practice together (Wenger 2006), students' engagement aspired to transform community groups into communities of practice for the duration of the project.

Project partners and relationships

The project was originally proposed in conjunction with The Tetley arts centre with the intention of building connections between it and the communities of South Leeds (Figure 2). However, the Tetley's commitment to the project dwindled during planning stages and so this aim diminished. Despite this, the drive for students to collaborate, and to work with community organisations still remained (Figure 3), and we also wanted to explore new technology, in particular social media, and how it might enhance collaboration and participation.

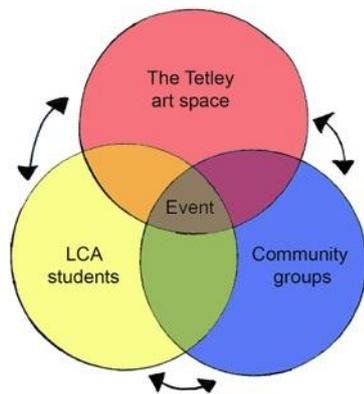


Figure 2: Planned

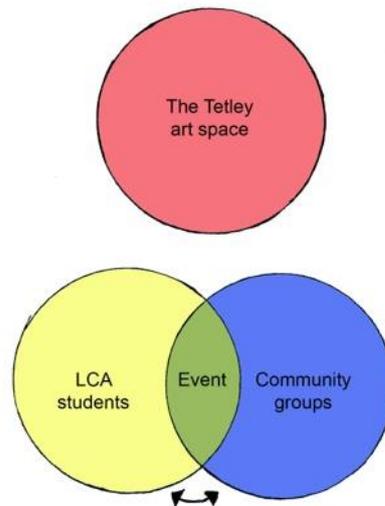


Figure 3: Outcome

Methodologies

Students were encouraged to develop participatory approaches when working with participants and to foster ideas inclusively by working alongside, with and/or in consultation with groups. Students collaborated within small peer groups to co-produce work with a common goal. This was vital to achieving the primary objectives of The Tetley Feast, which were to build relationships with people and to value process over product. As Bishop states:

Artistic practice can no longer revolve around the construction of objects to be consumed by a passive bystander. Instead, there must be an art of action, interfacing with reality, taking steps – however small – to repair the social bond. (2012:11)

It was important to build a framework that enabled students to have the freedom to build a genuine rapport. *Genuineness, trust and understanding* are identified as key attributes by Carl Rogers in any learning relationship (Rogers 1967 304-311 in Smith 2004). Hence most of the LCA staff effort went into the role of facilitation, organising the infrastructure of the project and seeding academic ideas and ethics at the onset. Key lectures introduced students to the concept and process of social design drawing on theorists such as Papanek, and showed examples of contemporary, national and international projects. Ethics, as guided by *Involve* (an organisation specialising in community engagement), assisted the safeguarding of students and participants and underlined students' social and moral responsibilities.

Additionally, drawing on Viscom staff experience of working with local communities over the past twenty years, students were provided with a supportive structure for collaboration by being placed in mixed ability groups, with third year students and graduate fellows as mentors. This framework avoided the process being overly prescriptive and allowed a plurality of voices within the project. Similar to Vygotsky's 'Zone of Proximal Development' (Vygotsky 1978), students' learning was mediated, social and situated in that they needed to communicate (both verbally and visually) within a social network in a specific professional context. This support structure, which drew on the experience of others, enabled all students to work collaboratively in unfamiliar circumstances, which they might not have otherwise experienced.

Process

Prior to the commencement of the project, tutors met with managers of the community organisations to establish trust and expectations. To commence with authenticity, it was important to be located in the same geographical area as the groups. Gui Bonsiepe (Fathers 2003:5) argues we must recognise the significance of a 'local context' when considering design needs. Hence the main bulk of teaching, which occurred in the first week, took place within the Tetley building, and this enabled students to familiarise themselves with the surroundings.

To encourage a positive start to the project, students organised an exhibition of their work for the community groups as a way of introducing themselves. Early meetings between students and the groups enabled relationships and initial ideas to form. Following this, students started to visit community groups and engage with them in their own space. First years, arguably less experienced than second years, had a set outcome to make a 3 minute documentary either for or about their community organisation. Second years were free to decide how they might interact with their group and negotiate a creative response. Students decided upon their own timetable and needed only to attend a weekly tutorial with their tutor at Leeds College of Art and see an occasional mentor on location.

Technology played many important roles within the project. The use of a social network platform which permitted both online public facing and private spaces within it, allowed students to share ideas, materials and to critique processes privately on a group blog. It acted as a repository for documentation of the project, allowing students to upload photos, films, documents and work-in-progress. It supported communication between groups working in different locations and allowed mentors and tutors to monitor progress (Figure 3). Community groups and the wider public could also engage with parts of the Tetley Feast social platform. In addition, Twitter gave us a public presence and we gained many followers, especially leading up to the end celebratory event, helping to situate the project within a broader social and cultural context and adding to its 'realness'.

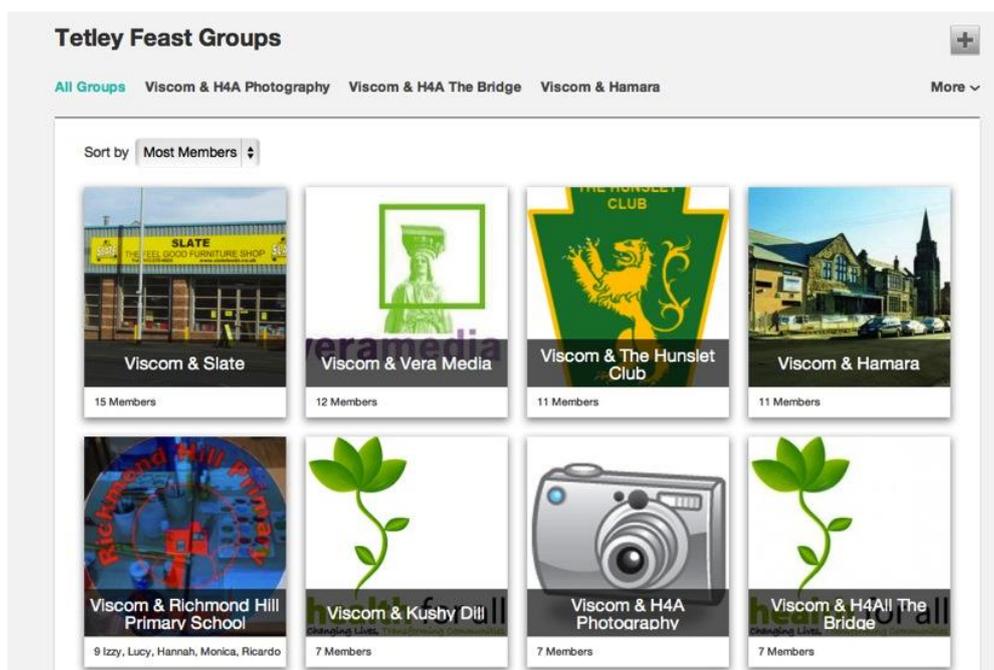


Figure 3: Student groups on The Tetley Feast social network platform

Technology also featured in other ways with students using cameras, video cameras and mobile technology to enable participation and interactivity amongst participants. For some groups, such as the Hunslet Club youth group, it was simply a case of the young participants watching themselves back on camera. Other groups didn't have access to technology and this was also a critical factor. For example, students working with the Polish women's group taught accessible photography workshops using participants' own mobile phones.

The project finished with a one-day celebratory event at the Tetley. This was designed, curated and hosted by the students and included the screening of films, an exhibition of photography, graphic design, craft, installations, interactive workshops and a community cake (Figure 4). Over 200 participants from the community groups and 70 students attended the event. One of the community organisations, Hamara, provided food.



Figure 4: Community cake made by year 3 student Rachel King

Evaluation

Qualitative and quantitative surveys from students and community groups, revealed well established and respected relationships between the two. 90% of students said they wanted to engage with community groups in the future and 100% of community groups want to sustain their relationship with students. The depth of the student experience varied from group to group. 100% of year one students felt they had positive impact on the project, whereas only 75% of year two students felt they had a positive impact because their increased freedom led to them feeling uncertain of the effectiveness of their response. The depth of response depended upon the frequency with which a community group met. For example, students working at Hamara, attended Monday to Friday and were able to fully immerse themselves in the organisation, whilst other students who worked with groups that met once a week, had a more limited experience. Students had a far more positive experience of working with participants than collaborating with peers. Community groups were transformed into communities of practice for the duration of the project and these became a context for learning for all, with students bringing new ideas and 'a breath of fresh air' (McGeever, P. Feedback Interview, 16th May 2014).

Our online social platform worked well for students, tutors and mentors, and helped with the assessment of students against module outcomes. However, the site itself failed to establish a dialogic relationship with both community groups and the wider public. Many students questioned its use and

were reluctant to use it at first, preferring more familiar platforms such as Facebook instead, whilst some students said it was invaluable in enabling them to work collaboratively. Comments post-project reveal many of the organisations had neither time, nor access, nor skills to engage with the platform and would have liked prior training.

The majority of students stated the project was a valuable experience, most citing helping others or bringing different groups together as the main reason, as well as achieving the aim to make groups visible to a wider audience. Following the event, the student films were screened to community groups within their own settings. Participants enjoyed seeing themselves in the final productions. As one community group manager identified, it added to their sense of self-worth (Iqbal, A. Feedback Interview, 9th May 2014). Students also presented the project to the Group for International Design Education (GIDE), Erasmus project in Belgium. The photographic skills taught to some groups are still being used and enjoyed and most of the 'product', be it information design or documentary films are being used by the organisations.

Students valued the development of their ability to interact with community groups. As a year two Erasmus student reflected:

It did not just developed ourselves in a creative photographic project, it also permitted us to interact with people who we probably would not have met in daily life, which deeply enriched our personal experience. I assume that our approach on people evolved different as we went along the project depending on what kind of people we were dealing with, and this is probably the best way to become more open-minded (sic.)
(Chaplain, J., Student Evaluation, 19th March 2014)

The space given to students to engage with organisations and think for themselves allowed a process of praxis, which can be defined as 'acts which shape and change the world' (Lindeman 1944:103 cited in Smith 2011).

The planned development of sustainable relationships between the groups and the Tetley arts center was less successful. Following the event, it is questionable whether or not participants would return, especially of their own volition.

It became apparent that the Tetley's community aims were not fully developed. One week before the final event was scheduled, the Tetley withdrew their offer of the agreed space, arguably putting commercial gain before community engagement. Although we were eventually offered an alternative smaller space, fortunately this did not deter any of the groups from attending, but it did make the event somewhat congested. A community group manager said she enjoyed the event but found it 'very crowded' and 'really hard work' (Garthwaite, A. Feedback questionnaire by email, 17th March 2014).

Conclusion

The framework and freedom of the project worked well for students. Evaluations and feedback indicated they valued the process of the project and could see its worth, especially social interaction with community participants and learning through experience. On the whole student conduct was excellent. They rose to the challenge of engagement and, as one manager identified, this was due to being given 'carte blanche' to interpret the project on their own terms (Iqbal, A., Feedback Interview, 9th May 2014). Derrick refers to Schon's 'swamp', the 'messiness' of life, as the site of real learning

(Schon in Derrick 2010:150). He argues, 'Creativity is part of a toolbox for liberal arts skills. [...] Skills to cope with the unexpected are worth cultivating [...]' (ibid. p.148). The unfamiliar setting outside of the studio has given students confidence and social and professional skills.

Although the impact on community groups was positive, managers identified the project had a greater impact on students. One manager acknowledged the worth in 'educating the younger generation to be socially responsible and understanding that the positive effects of working with people can be a valid form of success,' (Jones, F., Feedback interview, 15th May 2014). The community groups seem happy with this outcome and value investing in young people as a means of social change for the future.

Community managers also broached the subject of funding and goodwill. For some, the time spent attending the event was unpaid. The project necessitated lots of unpaid time given in goodwill from Viscom Lecturers. Student transport and material costs were paid for by a local Community First Grant. Without this, the project would not have been possible and this highlights the need for more core funding to be made available to run similar projects in the future.

We plan to run a similar project again next academic year but over a longer period of time. Now that a successful model of practice has been established, more time and space will be available for students to 'play' with process and integrate participation more effectively. Students need to work with organisations whose structure is more amenable to an immersive student experience. However, we are committed to maintaining a working relationship with all groups and have already engaged in other smaller projects with several of them. Next year, we plan to work in partnership with a community organisation that has clearly defined aims and a centre for the final event instead of the Tetley. Whilst we agree with Harland and Pickering who argue, 'the grand claim of a liberal education is that it frees educated people to help society and perhaps make the world a better place to live in' (2011, p.85), we would also contend that we have a lot to learn from community organisations, who are themselves very capable and experienced in shaping a better world.

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CONSTRUCTING COMMUNITY ENGAGEMENT: SOCIAL FACTORS AND DESIGN-BUILD EDUCATION

Michael Hughes

American University of Sharjah

Abstract

Beyond the scale of details and joinery, design-build projects introduce students to a contingent complexity located in the realistic realm of inter-personal and inter-professional dependence. Full-scale projects engage issues of community, budget, politics, clients and the often complicated notion of 'constituency' that demand expertise beyond the scope of work typically associated with the individual student working on design in isolation. Located between the extremes of vocational training and conceptual design study, the resulting hybrid, learning environment emphasizes the importance of teamwork and the role of dialogue in architectural practice. Students encounter a new type of learning where knowledge acquisition demands empathy, humility, and new types of interpersonal communication skills developed through outreach to a diverse community of clients, stakeholders, consultants and mentors. Through this immersive approach students are confronted with the potential of an indeterminate scope to their architectural endeavor that expands the potential field of operation beyond issues addressed in conventional design education. This discourse offers an alternative to the fragmentary nature of traditional architectural education in which drawing and construction, as well as designer and client or designer and consultant, are too often seen as separate, codified realms of isolated expertise. This paper explores the latent lessons existing in design-build education that explicitly engage the contingent and the unknown in an effort to reveal the practical limits of architecture's proprietary language. Examples reveal under-appreciated learning outcomes embedded in community engagement and suggest that these contingent skills, (problem setting, client interaction, communication, etc.) are equal to the lessons of physical making commonly associated with the finished design-build products.

Keywords: *Design-Build, Contingency, Dialogue, Immersive, Live Projects.*

Introduction

Contingent pedagogies teach the unique craft of disciplinary practice in all its complexity by embracing the unknown and uncontrollable that defines the making of architecture in the real world. Beyond the scale of details and joinery, full-scale design-build projects introduce students to contingencies through exposure to the real complexity associated with inter-personal and inter-professional dependence. Located between the extremes of vocational training and conceptual design study, the resulting learning environment emphasizes the importance of teamwork through engagement with issues of budget, politics and the often complicated notion of 'constituency' that demand expertise beyond the scope of work typically associated with the individual student working on design in isolation. Participating students encounter a new type of learning where knowledge acquisition demands empathy, humility, and communication skills developed through outreach to a diverse community of clients, stakeholders, consultants and mentors.

Through this immersive approach students are confronted with the potential of an indeterminate scope to the architectural endeavor that expands the potential field of operation beyond issues addressed in conventional design education. This discourse offers an alternative to the fragmentary nature of traditional architectural education in which drawing and construction, as well as designer and client or designer and consultant, are too often seen as separate, codified realms of isolated expertise.

Discussion

The role of design-build as a mechanism for the reintegration design education with construction methods, building technology and the full-scale act of physical making is well documented in the literature commonly referenced by North American academics. This conventional focus on the fabrication process, along with the final object, tends to obscure academia's capacity for introducing and reinforcing Architecture's efficacy as a mechanism for human-centered, empathetic and socially responsible practice.

A review of the literature on 'design-build' education reveals a clear alignment between the binary terminology and the focus on the novelty of the physical, full-scale 'build' along with the resultant, often beautiful, production are privileged as a return to a lost tradition. Brian Mackay-Lyons, founder of the Ghost Lab in Nova Scotia, argues that, "Pragmatism is the best teacher" and "Technology is best learned by making" and he links design-build to, "The apprenticeship model of architectural education—its roots in the master-builder tradition of the Middle Ages" (Mackay-Lyons 2008:135, 138). This example reinforces a polemic embedded in the 'design-build' nomenclature that privileges a particular myopia toward the tangible aspects of tectonics, gravity and assembly.

Social Practice

The design-build process often conceals the inescapable realities that affect, perhaps define, all architectural practice from the participating students. The involvement of property owners, stakeholders, department administrators, university officials and lawyers, and municipalities suggests the extent to which an individual project is shaped by external contingencies and extensive dialogue. The process of project acquisition, preparation and underlying negotiations can take months to complete and often involves a wide range of people. This type of preparation typically occurs before students enroll in the course.

Inter-personal relationships play a key role in the creation of architecture. All projects require extensive interaction with a wide range of contributors who may not share the same goals, cultural values or linguistic norms. Barbara Wilson suggests that, "The practice of architecture is inherently social, weaving together the needs of patrons, users and the greater community" (Wilson 2008:30). Cuff locates social and interpersonal relations at the center of architectural production saying, "The artifacts of practice, buildings, are socially constructed by the hands of individual architects, their coworkers, the organizations they work within, the array of contributors from clients to consultants and their colleagues, and by larger socioeconomic forces that affect the profession" (Cuff 1991:13).

Even on the smallest design-build projects, such as a modest residence, there are often multiple clients ranging from the people who will ultimately inhabit the completed project to the non-profit organization leading the development process to the funding agencies enabling the work. Depending on the location and politics involved, the neighborhood association(s), adjacent communities, and elected officials may feel a sense of ownership or entitlement. Then there are the numerous

consultants as well as the multiple voices and agendas represented within the design team.

Language Lessons

From initial project identification and client introductions through problem setting, program development, negotiations, and collaboration with consultants dialogue enables, and sometimes disables, the making of buildings. However, explicit exposure to the diverse forms of language utilized by project contributors remains, largely, absent from contemporary architectural education. In fact, one could argue that architectural education creates communication problems through the perpetuation of proprietary jargon. Witold Rybczynski's explains the architect's peculiar linguistic affectations as an attempt to, "... distinguish themselves from lowly builders and carpenters, architects adopted a specialized vocabulary, often substituting complicated Latin-based words for their simpler Anglo-Saxon equivalents..." (Rybczynski 2011:[sp]).

Learning to speak with others, in their language, can reveal nuanced understandings of place, culture and community that exist beyond the scope of formal analysis. For designers, input from collaborators provides insights and knowledge crucial to the creation of specific architecture in a given condition. In order to access this information, designers must be equipped with adequate tools. By extension, architectural education can be structured to provide an introduction to problem setting based on collaboration and discourse to create what Nadia Anderson calls, "...a reciprocal relationship between community and designers that is more productive than either party would be on its own." (Anderson 2014, p 18) Dana Cuff articulates the challenge to the academy by suggesting that, "...the nature of studio work can be revised to better prepare students for collaborative practice. Specifically, studio problems that require teams to solve them and studio problems that require negotiation with actual clients or consultants will help teach collaborative skills" (Cuff 1991:252).

Implementation Strategies: Urban PreFab Initiative

The curriculum employed in the Urban PreFab Initiative at the University of Arkansas differs from the standard design-build model by incorporating a flexible, multi-semester schedule allowing for more direct student engagement with a full range of collaborative processes. For example, the Porch House prefab completed in 2010 (Figure 1) was a collaboration between a core team that included a local non-profit housing developer, the Petaway Park Neighborhood Association, the future home owners, the Mayor's Office, the municipal building and zoning department, tradesmen from the University Facilities Department, Members of the Local Construction and Design Professions, and an interdisciplinary team of faculty and students from the School of Architecture.

The non-profit developer, the Downtown Little Rock Community Development Corporation, (DLRDC), has been working to impact this particular neighborhood since the early 1990's. They create partnerships designed to increase affordable housing options. To date they have built over 30 new houses and renovated another five historic apartment buildings to create homes for over 300 people in Petaway Park. As a local organization with a long record of participation in the neighbourhood the DLRDC provided students with important insights and access to the culture of the place.



Figure 1: Porch House Prefab Project

Discussions facilitated by the DLRCDC between the neighbourhood, the future homeowners and the student team revealed a clear, and largely unexpected, desire for the unconventional in terms of alternative construction, formal experimentation, and sustainable, cost-effective design. At the first meeting residents responded positively to the prefabricated construction process and even suggested the reuse of steel shipping containers, which aligned with the student's affinities. Afterwards the students had to reassess their presumptions and recognize the residents as allies rather than hurdles. Through this dialogue the previously independent constituents came together around the discovery of shared values, which led to further discussion about local culture, aspirations and design.

In a subsequent public meeting students presented their initial proposals, which met some resistance from residents in an adjacent, largely affluent historical district who cited the unconventional forms. In response, the residents of Petaway Park stood up to repeat their desire for alternatives and their support for the student's initiatives. The future homeowner, Quincy Scott, made a persuasive argument noting that people are different, wear different clothes, and drive different types of cars, so there should be options for how and where people live. He went on to say that he did not want to live in a normal house for normal people. As a result opposition disappeared. Representatives of the building and zoning department became allies offering solutions to municipal codes. Students worked with the city to propose alternatives that resulted in waivers to both the aesthetic guidelines and the zoning guidelines. In the end, students developed a new appreciation for collaboration built on dialogue and witnessed the contributions of their community partners facilitate change that their professional training alone could not achieve.

In addition, 37 people representing twenty-eight companies donated time, training and expertise to assist participating students as they worked from the initial, conceptual stage through construction

documents and finally to the full-scale construction. Along the way students developed mentor relationships with craftsmen in the building industry and developed new skills by working with professionals in the electrical, plumbing, and metal-working trades as well as equipment operators and consultants from the allied professions of Engineering, Contracting, and Landscape Architecture.

Implementation Strategies: The Rural Studio

Attempts to expand participation and weave contingent, collaborative learning opportunities throughout the design curriculum confront a series of logistic and political realities, not the least of which involve accredited curricula requirements, tenure processes, funding cycles and the academic calendar. Extraordinary financial and time commitments from the participating clients, faculty, and students combined with legal concerns at the administrative level conspire against widespread implementation. Large student populations, limited access to fabrication facilities, administrative legal concerns, and insufficient funding for tools, materials, and instruction present additional obstacles.

Under the direction of Andrew Frear recent design-build projects at Auburn University's Rural Studio have attempted to overcome these hurdles. Students at Auburn have two opportunities to study at the Rural Studio. The first opportunity is required of all students and occurs in the 3rd year of the 5-year program. This opportunity is seen as a fundamental component in the core curriculum and largely adheres to the typical design-build focus on making in an effort to introduce students to the link between design intents, material, gravity and construction.

Auburn students are able to return to the Rural Studio for a capstone project at the end of their 5-year undergraduate program. Each team of 3 to 5 students is given a base budget and access to some equipment, but beyond these starting parameters each team is responsible for the entire architectural production. Faculty members serve as mentors who provide advice and guidance rather than project coordinators. Key to the success of this model is the removal of the academic schedule. Projects progress at a pace set by the project and its unique contingencies. As a result, some projects require an academic year to complete while others extend over multiple years.

Implementation Strategies: American University of Sharjah

A series of modest projects at the American University of Sharjah attempt to balance the desire for a contingent pedagogy with competing academic and administrative logistics. Designed to augment the existing infrastructure in and around the architecture school the projects intentionally constrain the scope of student exposure, in terms of the number of contingent conditions, while maintaining the fundamental complexity of the experience. Participants encounter diverse opinions from a range of constituents and clients. The Dean, Department Head, Campus Architect, members of the Facilities Department, faculty and fellow students privilege their often competing agendas. Similarly, each constituent group relies upon their own form of communication, in terms of language, idiom, and formality.

On the Display Wall project (figure 2) students engaged a structural engineer and seventeen different material suppliers. The student team encountered language and communication issues at multiple levels while interacting with the construction community. Discussions about construction techniques and desires were clouded by difficulties with verbal and visual communication. In the polyglot UAE, English is the lingua franca. Most of the students speak fluently in English and Arabic. However, much of the construction community (with large representation from the Indian sub-continent) does not

speak either language fluently. Students also encountered varying degrees of success communicating with consultants and fabricators with normative architectural representational techniques. Two-dimensional drawings were only partially helpful in communicating the design intent and a 3D digital model became an important translation device.



Figure 2: Display Wall



Figure 3: AudioFab Project

Students working on the AudioFab project (figure 3) took a different approach in order to delve deeply

into a narrow spectrum to address noise pollution in the first-year studio. Students limited their investigation to a particular 'material language' by focusing on the capacity of sheet metal in conjunction with material processes enabled by the school's acquisition of a new metal capable CNC laser. Bracketing the scope and variables allowed on the team to work with a smaller group of collaborators, specifically an acoustical and structural engineer, thereby intensifying the discipline-specific lessons offered by each mentor while maintaining the contingent nature of the exercise.

Conclusion

Typical teaching models in architecture schools, "highlight the importance of pure design by removing from its study key aspects of professional practice: the client or patron, the coordinated group process of design, and economic and power relations." (Cuff 1991:45) This tendency excludes students from the dependent nature of the discipline involving the "messy reality" of human interaction. (Till 2010) While design-build is often celebrated as an opportunity to engage the real world, the process of project development, client acquisition, administrative preparation and the associated negotiations often occur before students enroll in the course.

Where current curricular formats cater to a static model of knowledge transfer the examples provided suggest the need for more new and inventive alternatives that promote adaptability, communication and collaboration. The contingent nature of architectural practice points to new models for evaluating course objectives and learning outcomes. In addition to the important material lessons embedded in design-build, the comprehensive nature of full-scale education can embrace the dependent condition of architecture as a desirable and fundamental part of the learning environment.

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MOVING RITUALS: CROSS-CULTURAL RE-INTERPRETATION OF MODERN DAILY LIFE RITUALS

Johanna Kint

LUCA School of Arts

Abstract

Within the scope of EU Erasmus Intensive Programs 2013, the aim of the project called 'Moving Rituals' was to re-interpret cultural rituals, together with the cultural dimensions of different communities, in the context of the design field. The notion of culture is understood to be continuously moving and changing, developing itself dynamically via the encounter between differences and similarities. The focus of the project was on rituals that play a significant part in everyday life and are formed and re-formed with the norms of modern daily life. In other words, the traditional structures evoked by the word 'ritual' - and taking ritual as a frozen entity in time and place - are being avoided. Accordingly, due to the understanding that takes culture as a dynamic content and form at the core of the project, the ritual approach was concentrated on how rituals have been changing with the norms of modern life and how new rituals are created due to the dynamics of modern life. This dynamic understanding of culture is a relatively recent approach within the scope of sociology and anthropology. Together with students from Ecuador, Iran and Jordan joining Turkish, Belgian and Dutch students, we looked at a participative, transcultural and interactive action within the fields of industrial design and social embedded, visual communication. The students designed interactive tools to look at cultural differentiation, to reflect on cultural issues and, as a result, to create a bridge between cultures. In this paper, we describe three projects as cases of best practice of the process of reflection and action upon culturally embedded aesthetic and ethical values and their relevance on the language of dynamic form and gesture.

Keywords: *Cross-cultural society, interactive design, rituals.*

Introduction

With 'Moving Rituals' we look at culture in an active way. We move from the old idea of culture as a 'thing-in-itself', challenging the static understanding of culture, to the new idea of culture as a continuous and active process of meaning making. (Wright 1998: 12)

On the notion of culture and transculturation

Culture, in both its old and new senses, has been introduced into many new domains in the 1980s and 1990s, including cultural racism and multiculturalism, corporate culture, culture and development, and many others. As anthropologist Susan Wright has argued for many years: cultural identities are not bounded or static. They are dynamic, fluid and constructed in particular places and times. Theoretical developments in cultural studies and in post-structural anthropology, have led us to understand that 'cultures' are not, nor ever were, naturally bounded entities. (Wright 1998: 9) Wright (1998:14) argues that she has distinguished 'between two sets of ideas about culture in anthropology: an older set of ideas which equates 'a culture' with 'a people' which can be delineated with a boundary and a checklist

of characteristics; and new meanings of 'culture', as not a 'thing' but a political process of contestation over the power to define key concepts, including that of 'culture' itself.' Wright (1998:14) goes on: 'Earlier this century, anthropologists used the old ideas of 'culture', the construction of an objective classification of people, as a strategy for appearing outside of politics. Now anthropologists who adopt new ideas of 'culture' are compelled to recognize that academic definitions of 'culture' are themselves positioned and political and therefore a resource for anthropologists and others to use in establishing or challenging processes of domination and marginalization.'

The concept of transculturation, developed by the Cuban anthropologist and ethnologist Fernando Ortiz in 1947, suits the project even better. Transculturation explicitly stands for the notion of merging and converging cultures on the basis of a social interaction between individuals or groups of individuals through encounters between two or more different cultures. The use of the concept of transculturation refers to the definition given by Ortiz in his publication 'Cuban Counterpoint'. In the subchapter on the social phenomenon of 'transculturation' and its importance, Ortiz mentions that transculturation is a set of ongoing transmutations. It is full of creativity and never ceases. It is irreversible. It is always a process in which we give something in exchange for what we receive. The two parts of the equation end up being modified. From this process springs out a new reality, which is not a patchwork of features, but a new, original and independent phenomenon. (Ortiz 1995: 97-103)

Transculturation implies an active and permanent collaboration between individuals or between groups with a different cultural origin. Transculturation debouches in an interpenetration of cultures or in a cultural syncretism; this is a fusion between two or more cultures, which leads to a tangible result that is different from the original cultures. This enriched concept of culture can be developed in different aspects of the socio-cultural field such as music, dance, drama or the arts, in the socio-economical field of design, fashion or management and even in the broad field of all activities that are imbued by human action.

Discussion

What do rituals uphold? What function do they serve? What social structures do they maintain? How do we understand them? How and in what way do they 'move' across cultures? How do we re-interpret them trans-culturally? We encouraged our students to contribute to community and society with shared values. As Susan Wright asserts in her article: 'Human civilization depends on creative diversity'. (Wright 1998:13) Students participating to the workshop were assigned to this article as a means to broaden and challenge their views on culture, from the perspective of rituals. As a result, they developed interactive tools to look at cultural differentiation, to reflect on cultural issues and to create a bridge between cultures. In the next subsection we describe three projects.

Verlanti

Smart phones have become extensions of our body. Even when meeting with close relatives and friends, many find it difficult to put them aside for a moment. In the Netherlands, youngsters found a way to temporarily disconnect from the digital world. When they meet, they all pile their cell phones at the center of the table, with a commitment not to use them. Verlanti supports this ritual of closing off the digital and opening up a conversation.



Figure 1: Verlanti



Figure 2: Mock-up version of Verlanti

Verlanti was developed by a group of five students: two from Turkey, one from Ecuador, studying in Brussels and two students from Eindhoven; one with Chinese roots. As they started talking about cultural clashes, it became clear that they were aiming for 'connectedness'. They started talking about how rituals such as coffee or tea drinking, smoking and going to a concert are activities that connect people without verbal interaction. Since smart phones have become our 'life companion', it is hard to put them aside even for a few moments, such as when meeting with close relatives and friends. In the Netherlands, youngsters seem to have found a solution to disconnect temporarily from the digital world. When they go out to eat or drink, they have this fun activity in which they lay their mobile phones in the center of the table, with a commitment not to use them when they are trying to have a real conversation. Whoever uses their phone has to pay the bill for the evening. This Dutch ritual emerged out of a response to people looking frequently at their mobile phones and established the starting point of Verlanti, which aims at expanding the moment of closing the digital and starting interaction.

One of the students described the design process as follows: 'In order to invite people to place their mobile phones in the center, people need to have a reason to do so. Having been in context, we had a better grasp of what would work or not. **First idea:** a speaker whose volume can be controlled through the amount of phones inserted. The speaker plays radio music. **Second idea:** a device that allows people to create music together through the insertion of phones. **Third idea:** tactile feedback on insertion of phones. **Fourth idea:** a dynamic lamp. We still decided to stick with the use of sound. We came up with the idea to vibrate a container with water through low frequency sound, with a light shining beneath which would project the vibrations on a surface. After exploring various types of speaker we found out it was more effective to use DC motors. Various liquids have been explored but water seemed to give the best result. **Processing.** The switches were connected to an Arduino that had a mounted Motor shield. The Arduino was programmed to send out various frequencies to the DC motor depending on the amount of switches turned on. **Shape.** We made a few mock-ups. The team agreed on working out the organic shaped device. Taking the shape of the water container into consideration, we made a 3D sketch and sliced it in layers. The layers were then laser cut on cardboard and glued on top of each other.'

For their final presentation, the students decided to act out a scenario in which it could be clearly seen that mobile phones form a real obstacle for direct communication. Through the acting out they also tried to make it seem as if the design had become an ordinary object instead of a main attraction.



Figure 3 - 6: Acting out a scenario for Verlanti

ReFeel

The way you greet someone is mostly culturally defined. Intercultural greetings can therefore be difficult and uncomfortable, but at the same time they define the atmosphere of the meeting. ReFeel is designed to intensify and evoke exploration in the ways of greeting someone. The designed garment addresses multiple senses, such as touch and sound, and thus creates a new and exciting greeting experience. ReFeel is the designed outcome of a jacket that by means of sensors converges touch to vibrations. At the same time music is played that – due to the low volume - can only be heard by the wearer and the person being hugged. This intensifies the experience that is shared by two persons and thus provokes even more physical contact.



Figure 7: Exploration of the way we embrace and hug



Figure 8: ...resulting in ReFeel



Figure 9 and 10: Film-stills from the re-enactment of ReFeel

Welcome

The third project, called Welcome, focuses on hospitality when it comes to a host taking care of the guests. The 'serving dress', as designed result of this project, shows the elegant movement of the serving ritual. Welcome mediates between host and guest through performative design interaction. The host serve the food - wrapped nicely and attached to the dress - and drinks with other people. The dress enables people to experience a moment of the relationship between host and guest and makes guests aware of the sharing process of hospitality.

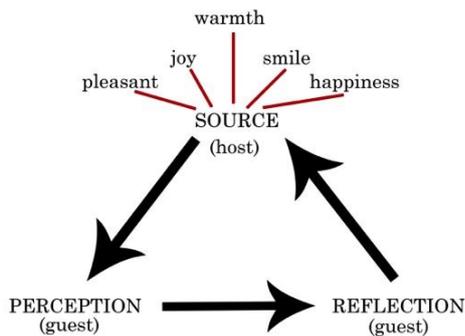


Figure 11: Diagram of the serving ritual as the movement of giving and receiving



Figure 12: The making of hundreds of small packages, filled with sweets and attached to the dresses

Within the serving ritual there is a dynamic flow, as can be seen in figure 11. Interaction is happening between guest and host, with both having a role. Serving is about the movement of giving and receiving. The host is the source. She stands at the head of the triangle. She is the initiator and starts the flow. The hospitality is described by words such as joy and warmth. The guest perceives and receives the hospitality in the form of food and drinks and reflects his gratitude by gestures and words. Out of this ideation grew the concept to put hospitality in the spotlight and show the constant movement of the host serving the guest. The specifics of the concept consist in showing enjoyment, the constant movement, putting the host in the spotlight, and showing openness and flexibility.



Figure 13 and 14: Film-stills from the re-enactment of Welcome

Conclusion

This paper is about the design outcome of the cultural dynamics of everyday rituals, transformed by the premises and standards of modern life. We focused our attention on the description and (brief) design process of three projects. The goal was to develop participative, transcultural and interactive action within the fields of design and visual communication. Apart from its focus, the significance of 'Moving Rituals' is also visible, due to the multicultural and diverse educational backgrounds of the workshop team. Thus, both with its multicultural structure and focus, this project was about re-interpreting the cultural differences and similarities of rituals through a cross-cultural perspective and approach to design.

The students participating in this project looked for different ways/venues to enhance mutual respect and appreciation as a basic attitude towards cultural dialogue and understanding. Transcultural student projects, within the design field, are thus looked at and worked out as the best possible way to handle respect and responsibility in a multidisciplinary and cross-professional way.

With 'Moving Rituals' we focused our attention on the process of reflection and action upon culturally embedded aesthetic and ethical values and their relevance on the language of dynamic form and gesture. We looked for an approach based on embodiment and phenomenology as a means that allows us to diverge from rational thinking. This reflection on action in a transcultural context is what we consider to be our new language. Nuffic experts assessed 'Moving Rituals' as excellent, involving 'cross-cultural co-creation' within the broader fields of culture, sociology, engineering as well as design.

What were the major lessons from this project, according to the students? The view of Hoang Mai Lieu (TU/e) on culture was rather myopic, which he realized thanks to the lectures and the firsthand experience of designing for a moment in time. He unconsciously looked at cultures as if there were solid boundaries between them, with certain cultures clinging to specific values. We tend to take these values for granted and regard them as fact. There is no fixed way to make use of these values. In fact values are constantly shifting and are the result of very complex dynamics. Trying to exchange cultural values, as Tove Elfferich (TU/e) reports, is something to experience, to reflect upon and to improve the way of action: at the end of the exhibition, the group of students that started two weeks earlier as individuals with their own cultural background became a close group with much more understanding and respect for each other.

Andrea Heredia (LUCA, campus Brussels) instantly had a good feeling about the project. Communication and cultural interaction within the group was easy, she mentioned, because 'we all wanted to know more about our cultures, being from Turkey, the Netherlands, China and myself from Ecuador.' She has learned that each person has his/her working process according to profession and personality, and now she understands how and in what way we can benefit from the positive part of that difference. And Banaz Palani, student from TU/e, strongly believes this experience made her more 'open minded' as a designer.

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DESIGN IN COOPERATION WITH DEVELOPMENT AID

Michael Krohn

Zurich University of the Arts

Orlando Campo Erazo

Zurich University of the Arts

Philippe Moreton

Zurich University of the Arts

Abstract

Since decades, design and the purpose of the design are widely known, at least in the so-called “developed” world. Design is an acknowledged important factor, often a driver for the economy, as well as for innovation, social- and cultural development. We expect design as something for every aspect of our daily life. We teach how to design and we learn how to use design. Design is certainly a cultural accomplishment. But it is limited to the wealthy part of the world. Having in mind that most of the people might know about design, but do not benefit from its achievements, this article discusses how design might have an effect for not equally developed societies. Furthermore, it describes how design can support the work of development cooperation for technical or social improvements. It sketches a preliminary guideline, based on best practice, to enable a stronger collaboration between designers and development aid organizations to improve the life of a great number of people.

Keywords: *Development Aid, Disaster Relief, Design Process, Co-Design, Research, Cultural Embedding, Sustainable solutions, Design Education, Interdisciplinary Work.*

Introduction

This article intends to be used by two groups of professionals. On one hand, it is for designer, which is collaborating with NGO's or other institutions involved in development cooperation projects. On the other hand, it should be a reference for social-, technical- or economical development aid organizations and -projects, which like to integrate design thinking and design practice in projects and strategies. It is based on a series of theory based and field explored projects, where designers collaborated with development aid organizations. Experiences and knowledge are still in an early stage, nevertheless we see a potential for design and the education of designers within this field. The following guideline is thought for design-education, design-practice and for development organizations, who like to follow our approach. It will lead through a series of steps and considerations that support project based development cooperation.

Context and Background

Undoubtedly, starting with industrialization, modernity pushed design as an important method to improve the quality of products and services and to raise the quality of life. In the second half of the 20th century target marketing, distinctive branding and the connection between value, function and

style was globally established. This led to a consumer- and product culture where design got more and more important.

This is true for the so-called “developed world. Products from, or for other parts of the world were often from worse quality and poor design. The world GDP map (figure 1) shows the contribution of the wealth around the world. The Design market focuses mainly on the wealthy regions where the possession of designed products is seen as a social achievement.

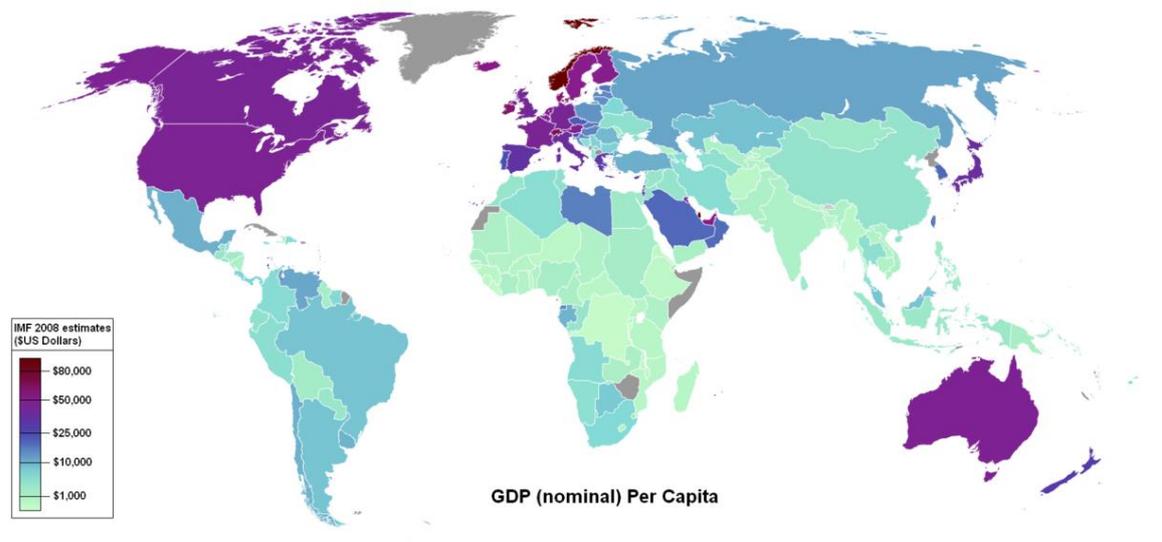


Figure 1: GDP nominal per capita (Source http://commons.wikimedia.org/wiki/File:Gdp_per_capita_ppp_world_map_2005.PNG)

Even with low GDP rates, emerging economies and developing countries are interesting for companies focusing designed products and services. In every region there is a certain amount of wealthy people to find, who can afford designed products with a global brand awareness. The sales figures of Apple for the last quarter in 2013 showed an increase in Africa of 65% and for South America of 76%. Apple plans to raise their shops in China from 16 to 300¹.

The effect of the globalisation of design for 90% of the world population

Design is global today². But the distribution of “design” efforts seems to be very unbalanced. Whilst development countries are interesting as market for global consumption, a dialogue considering their specific needs, fall only on little interest. “Design with the other 90%” explores design that helps to consider real needs as access to food and water, infrastructure, health services and education, sanitation and energy supply for those who most need it. This for regions with a very low developing rate and a small income, may it be rural or urban. Copper Hewitt showed examples to this approach with an exhibition and a catalogue³. Being a designer in Europe or North America, working in a competitive market, it seems strange that most of the design work aims for a very limited number of the world population. Design produces countless variations of the same for a saturated and matured market: cars, watches, sunglasses, computers and many other products, which often differ only in small details.

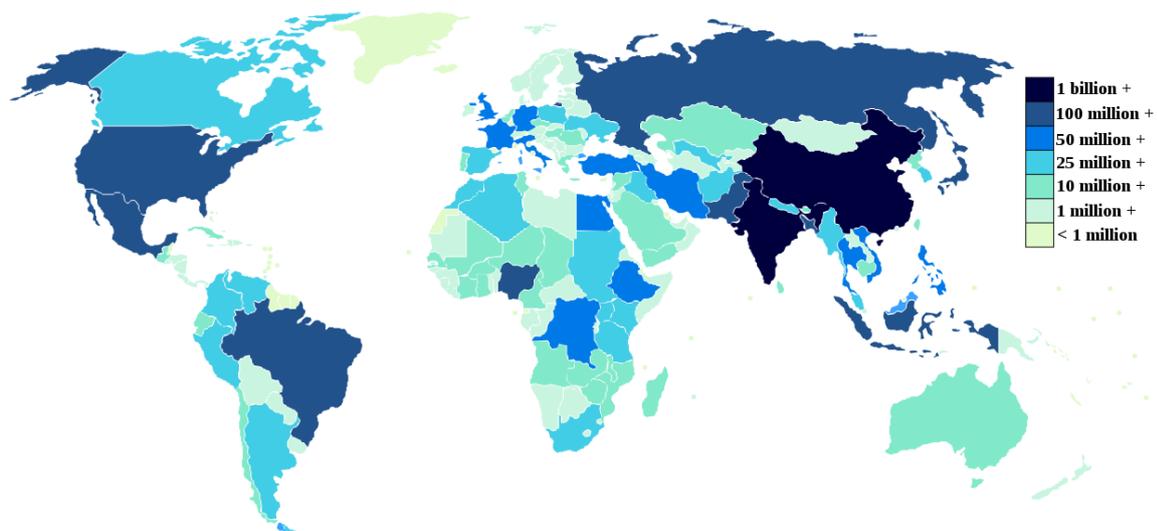


Figure 2: Distribution of World Population 2012 (Source http://en.wikipedia.org/wiki/World_population)

Why design for development cooperation?

Development cooperation distinguishes between short time aid, as for catastrophes, refugees, hunger crisis etc. and middle or long term help to establish stable situations and sustainable conditions⁴. But the topics are often the same: access to safe water, supply of energy, medical help, housing, education, etc.

Parallel to development aid, the poorest group of a society (often the receiver of development aid) is economically interesting. This group is referenced as “Bottom of Pyramid”⁵ (BOP). BOP is defined as the largest, but poorest socio-economic group. These are the 3 billion people who live on less than US\$ 2.50 per day⁶. BOP is seen as a vast market that grows exponentially. According to the work of designers, cooperating with development aid and designing for the BOP, this raises topics and issues that are not covered in design education, neither in design practice. Development aid organisations and technical development aid are often unaware about the potential of design and design thinking to improve their projects. This includes designing for local production and distribution, enabling entrepreneurship.



Figure 3: Typical BOP housing in the Kenyan steppe



Figure 4: Water collection comparison in Bolivia, Kenya and Columbia

Design has a genuine effect: creating awareness, activate social changes, displaying fair information, improve cultural embeddings, changing behaviours, focusing gender issues, etc.. Therefore, design can support better products, spreading new technologies, support efficient production, creating small businesses, introduce new services, etc.

A different design approach

Even with a non-altruistic view; for designers, the “not so developed” part of the world (and with this the far bigger part of the world) is interesting to work with. But are designers trained to conduct this? And what distinguishes design for the less developed world from other design? Discussing these questions raised another topic: how deal development aid organisations and research related development aid with design? Do they integrate design and design thinking in their strategy?

These questions started a research project, were we established a preliminary guideline that enables collaboration between designers and development aid organizations. We are convinced, design approaches, methods of research, processes and results must be different as for “normal” design tasks. This led to the hypothesis, that only in close collaboration with the concerned societies and development aid organisations a guideline for “Design with social impact”⁷ can be developed based on best practice.



Figure 5: GDM Water Filter, Co-Design in Kenya

A guideline for “Design with social impact”

Only a few design publications focusing design and BOP or development aid cooperation. Most known is the IDEO “Human Centred Design” toolkit, consisting of several practise oriented handbooks⁸. This is an excellent example how design supports development aid. But is rather generic and basic. Our approach has to be understood as a more focused and applied method.

Design must have a positive effect for both sides: for goods used in development regions, as well as for enterprises, which are producing for export to our countries. Education for regions, which have little economic achievement and small creative economy, based on cultural traditions and crafts, it offers the chance for the implementation of a design related market. This enables sources of income that can be created by design-based production and education of young designers for these regions.

The “Universal Design” approach

As a basis, we use the “Good design is universal”⁹ approach: products, information, services, environments and systems are formed, that they are usable for so many people as possible without adaptation or specialization. This is based on social needs and behaviours and are put accordingly in the foreground:

- Equitable use
- Flexibility in use
- Simple and intuitive
- Perceptible information
- Tolerance for error
- Low physical effort
- Cultural aesthetically and valuable
- Non discriminatory
- Size and space for approach and use

In experience of the specific needs, we added:

- Sustainable in production, use and dispose
- Adapted technology and complexity
- Gender, culture, race, ethnicity and religion sensitive
- Low energy consumption, low emissions
- Potential for micro entrepreneurship, small business and labour
- Remains in the hands of the concerned
- Locally rooted, direct impact for the concerned
- Enables independence in several aspects

Design research leads to practice

Educating our designers for these purposes must be based on research, knowledge, experience and intercultural sensibility. This, in turn, is based on experiences and dialogue and the “Designerly way of creating”¹⁰. But designers fulfil this not alone, they cooperate with organizations which are present in the specific regions having knowledge about the conditions. The critical support of technical development aid is another issue. Well-intentioned innovations, although perfect engineered, often have not the expected impact, because they lack the consideration of the behaviour, the context and the cultural embedding. Some of the problems cannot be solved by technology and simply some good

planned scenarios do not work in the reality. Development aid organisations and technical development aid often have a total wrong understanding of design.



Figure 6: From faeces to fuel–sanitation service transforming human faeces into solid biofuel, Kenya

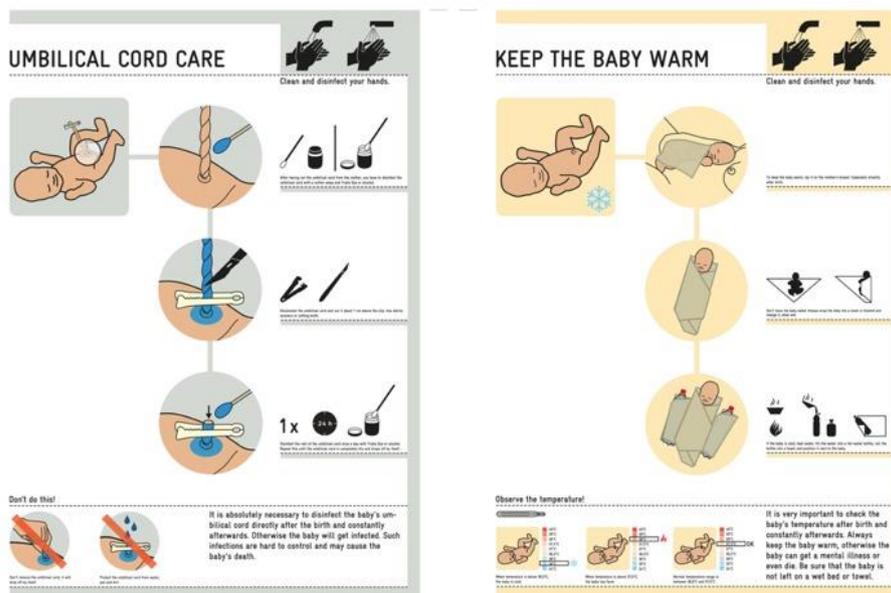


Figure 7: Pregnancy and birth kit, South Africa for World health Organisation

From observation to action

Understanding the difference between a “normal” design process (as for western markets) and designing for and with development aid organisations this means:

- identify the setting of the project: who wants to do something for whom and why?
- what is the benefit for the concerned society
- monitoring the habit and behaviour of the concerned, defining the needs and necessities
- considering the cultural impact and embedding for the concerned
- starting co-design with the user group, including “soft factors”, like gender, religion, climate etc.
- seeking ways of implementing solutions, aiming for tangible and usable results
- think about the opportunities to establish small scale entrepreneurship for the concerned

- integrate the language and the purpose of the social sector, especially with of the involved development aid organisations.
- support independent, local creation and production

The seven steps approach

Within seven steps, we explain how design can be integrated for development aid processes, may it be technical, social or economical:

- for development organisations who are willing to integrate design in their projects
- for topics where design has the potential to contribute an important part of the solution
- with an user centred approach for co-design and the integration of ethnographic field research

The seven steps are as follows:

STEP 1 – Focusing the problem

- 1.1 Starting point needs
- 1.2 Define the aim of the research
- 1.3 Define research methods
- 1.4 Going into the field
- 1.5 Doing research and analysis
- 1.6 Interpret the results

STEP 2 – The design Brief

- 2.1 Derive a briefing from the research
- 2.2 Creating scenarios of the briefing

STEP 3 - Facing the reality

- 3.1 Preparing the concept- and design process
- 3.2 Analyse the problem using simple models, observations and scenarios
- 3.3 Categorize and assess the results

STEP 4 - Factors catalogue

- 4.1 Define a catalogue of hard- and soft factors for evaluation

STEP 5 - Generating solutions

- 5.1 Defining creative co-designing methods
- 5.2 Develop concepts in variants
- 5.3 Create simple functional prototypes for real testing

STEP 6 - Improving the solution

STEP 7 - Implement the solution



Figure 8: GDM Water Filter, Prototype testing in Bolivia,

Focusing the problem

A field study gives better understanding the needs of the user and the general task. Here, we make use of cultural probes methods¹¹. Doing research as a designer means first of all, asking the right questions and defining the problem, seeking information about the user, its context and the interactions. It includes cultural, ethnological and social aspects. This helps for well-founded design decisions and evaluation.

The design briefing

The briefing defines and evaluates the aims of the project. It combines of what has been experienced and what has to be achieved. It should be specific as possible, using text, pictures, storyboards, etc. It describes hard factors and soft factors.

The user group should be described in their personality and the circumstances of life. In order to make the user more real, it is recommended to use photographs and write a detailed description of the personality, habits, attributes, desires, circumstances and needs. This can be on an emotional, social and physiological level. The notation of the daily routine helps to identify important aspects.

The **context of use** of the product is a scenario or storyboard with illustrations of the interactions and conditions under which the solution will be used. To define the context of use, it shows where the interactions take place. Pictures and simple drawings illustrate the scene of use.

The **product definition** includes attributes as well as constraints (what the product must, should and must not be). It defines two important aspects: the formal language of the product and the message the product communicates. Both can facilitate a lot of cultural and social aspects.



Figure 9: MoSan dry toilet prototype in Kenya

Functional Aspects asks how easy is the use of the product. Is it gender neutral or not? How many steps have to be taken to achieve the desired result? How easy is the maintenance? How frequent is it used? Can it solve specific problems? Is it failure tolerant?

Symbolic Aspects regarding colour, form (as a language), material, textures, possibilities of branding etc. Are social aspects of the formal language as symbol, status, gender orientation etc. considered?

Physical attributes include technical criteria such as weight, size, material, durability and the number of components. It also asks for sustainability, reparability and low complexity in construction and assembly.

Economical Aspects are related to questions of price, production and distribution. This includes distribution channels and the possibility for micro entrepreneurship as well as the chain of distribution and the question where the profit remains.

Discussion

Setting up the thesis, that there is a huge potential designing for 90% of humanity, as well as for the BOP, we are not alone. IDEO issued their "Human Centred Design Toolkit"¹², Danish Industries their "Working with the bottom of the Pyramid"¹³. Our research added a practice-based method. The seven steps approach defines a guideline that supports designer and development organization to achieve better results. The most important outcome; design in context of development cooperation is different to "normal" design. It integrates specific aspects as co-design, ethnographic studies, cultural probes, shadow tracking, low-tech solutions, micro entrepreneurship etc. This leads to methods and processes, which can be educated and trained in design courses. In general, design acts as link between culture, social sciences, technology and economy.



Figure 10: Improving hygienic situation for women living in slums, Svacchata Association, India

Conclusion

Design in cooperation with development aid organisations and for BOP is underrated. It can support development aid in a broad sense, from analysis to implementation. For design education, it can be seen as a new and significant field. It combines intercultural, interdisciplinary, ethnographical, economical and technological aspects. It opens inventive thinking and intelligent solutions for humans who need it urgent. With the ability to contextualise, to combine and define solutions in detail with the use of creativity, designers add potential to development cooperation. With our guideline, design practice and education can be supported to gain better solutions.

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¹⁰ Fatina Saikaly, Approaches to Design Research: Towards the Designerly Way, pg 7

¹¹ A good source for cultural probes method: <http://designingwithpeople.rca.ac.uk/methods/design-probe>

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DESIGN EDUCATION FOR A WORLD OUT OF BALANCE: A CASE STUDY

Michael Leube

Salzburg University of Applied Sciences

Michael Gugg

Salzburg University of Applied Sciences

Abstract

Over forty years ago, design philosopher Victor Papanek published his “Design for the real World”, in which he appeals to industrial designers to tackle real rather than constructed problems. Dire issues such as limited resources, uneven distribution of goods, limited access to education or environmental degradation have only gotten more complicated since its publication, but rarely are they seen as worthy of a Bachelor or Master thesis at design schools. Rather, students construct new problems and often experience a kind of existential crisis. This paper is an attempt to analyse why students are so reluctant to help the other 90% using a psychological and sociological framework. It is also a proposal of four major changes in the curriculum of design schools as implemented in the department of Design and Product Management (DPM) at the Salzburg University of Applied Sciences to encourage students to see the responsibility they hold as future designers: 1) A moral compass similar to the Hippocratic oath needs to be fully anchored in order to establish “good design”, 2) all forms of underdevelopment and actual problem-solving should once again become the focus of design, 3) design education should become more “place-based”, which means that students should be made aware of actual problems in the field and 4.) the methodological tool kit of the human sciences needs to be made available to design students. We believe that a crisis in design is a mirror of a wider societal crisis and that such changes in the curriculum of design schools would benefit students, professors and society at large.

Keywords: *Design Education, Underdevelopment, Ethics, Anthropology.*

Introduction

Anomie and Cognitive Dissonance

To describe what we see amongst our students, we use two terms from the social sciences: *anomie* and *cognitive dissonance*. Design schools are largely missing the norms provided by ethics; when “anything goes”, students experience normlessness and frustration. In 1893, Émile Durkheim, first used the word *anomie* to describe the mismatch of collective guild labor to changing societal needs. Later, in his famous study of suicide, Durkheim associated anomie to the influence of normlessness: “One does not advance when one walks toward no goal, or (...) when his goal is infinity.” (Durkheim 1979:248). There exists sociological theory on the link between greater society and anomie (Marks 1974:329-363), but not on anomie and design.

More than normlessness, we believe our students actually experience *cognitive dissonance*. Victor Papanek wrote on a dilemma intrinsic to design stating that few professions have as high a potential

for damage (Papanek 1984:ix). The root of this problem, Papanek sees in the very nature of industrial design:

“Whereas architects and engineers routinely solve real problems, industrial designers are often hired to create new ones. Once they have succeeded in building new dissatisfactions into people's lives, they are then prepared to find a temporary solution. Having constructed a Frankenstein, they are eager to design its bride.” (Papanek 1984:215). We believe that internalizing such criticism and at the same time striving to be successful designers is to hold two inconsistent cognitions and actions, resulting in what is called *cognitive dissonance*. In the mid-1950s Leon Festinger developed this concept when observing members of a doomsday cult. When the leader's prophecy failed, Festinger noted strong proselytization by the members (Festinger 1956:252-259). Design is not a cult but its students are often asked to simultaneously work in diametrically opposed directions; they are asked to be part of the problem and at the same time help solve it. When the preferred *consonance* is not achieved, they experience unease and anxiety. *Cognitive dissonance* has been studied among many societal sectors such as religion (Burriss & Harmon-Jones & Tarpley 1997:17-31) or economics (Akerlof & Dickens 1982:307-319) but not design as a profession.

Discussion

Failure of society, failure of design

Why would our students experience feelings of *anomie* and *cognitive dissonance* when there are so many societal challenges for designers to deal with? Humans have always designed and improved their lives and it indeed seems likely that the act of giving new form to existing materials is an evolutionarily advantageous trait and thus innate to the genus Homo (Wilson 2007:182-193). But, if we have always designed, how can there be such a crisis of purpose now?

Wants of the 10%

It is hard to ignore the massive schism between rich and poor. The hotly debated book “Capital in the Twenty-First-Century” by Thomas Piketty focuses on just that (Piketty 2014). If Piketty's analysis is correct, a global minority has amassed a majority of the global capital, which they want to spend on always-new products. For designers such trends are good as they gladly design those commodities. Thus, marketing – trying to create new needs – has become closely entangled with design. Obviously, “creating new needs” is oxymoronic and should be labeled more correctly “creating new wants” but design frequently adopts the deductive research of marketing as its legitimization. The result is a kind of fetishism of objects, even “oligarchic design” exhibited in fairs and expos around the world.

The *Occupy Wall Street* slogan, “we are the 99%”, precisely addresses the massive disparity of income in the U.S.. Anthropologist David Graeber wrote that movement's manifesto, in which he painstakingly outlines a world economic order based on debt (Graeber 2011). Other manifestations of friction between the privileged few and the underprivileged majority are the riots in the suburbs of Paris, the *indignados* movement of Spain, the revolts of Greece and the hacker group *Anonymous*.

However, the most glaring divide in wealth is between the developed and underdeveloped countries. Dependency theorists of the late 1960s and the 1970s voiced a welcome critique to the teleological *modernization* theories and helped to explain rampant poverty in the underdeveloped world, while the developed countries continued to prosper. Indeed, we can see global poverty not as an inevitable result of social evolution but as a purposeful *underdevelopment* and hence we will use these terms

rather than the outdated “1st/3rd world” or the vague “North/South” dichotomies. Immanuel Wallerstein’s *world system theory* stands in this tradition and was a first attempt at a theory of globalization, pointing out that core countries could only have become powerful *because* of the poverty of peripheral countries (Wallerstein 2011). Gary Gereffi goes much further by examining the global commodity chains, which hold the world in its current order (Gereffi 1994). The logical consequence of such explanations is that designers and end-consumers help shape a very uneven world order and hold it in place.

In the so-called *Global South*, the disenchantment of the underprivileged is not a theoretical but a brutal practical matter. Perhaps the most obvious manifestation of anger and dissatisfaction are the “poo wars” in Cape Town, where officials were literally forced to deal with important infrastructural issues when protesters dumped human excrement in major parts of the city (Hutchinson 2013). Designers could help ease such tensions.

An example of irresponsible design is the coffee capsule by Nestlé. The Swiss company reacted to societal trends and made an extremely user-friendly product, created a very successful business model and service, which in turn is changing society’s consumption of coffee. Drinkers of filter coffee mutated (with the help of George Clooney) to aficionados of Espresso drinks. In its wake are an estimated 6.000 tons/year of aluminium waste from households worldwide (Groh-Kontio 2012). Meanwhile, in Brazil vast stretches of indigenous territories are threatened by the proposed construction of the Belo Monte dam, designed specifically to aid the aluminum industry (Schilly 2012). Indeed, industry often ignores clear warnings from the scientific community as the case of Swedish Chemist and winner of the Nobel Prize, Svante Arrhenius illustrates. Arrhenius caused scientific fear in 1895 with his thesis that growing CO₂-emissions could cause a greenhouse effect on earth and in 1985 – almost a hundred years after – his view was scientifically verified at the proceedings of the World Meteorological Association held in Villach, Austria. Totally ignoring many such warnings, in 1987 BMW presented the first German 12-cylinder engine after World War II. Hundreds of thousands of hours of engineering and design research went into this prestigious project instead of exploring adequate new versions of transportation. In short, while designers are desperately needed to solve existing problems, they predominantly work for the most affluent and more often than not create new problems.

Changes in the curriculum: a moral compass

Societal crises are complex and the variables vast. In 1995, industrial designer Dieter Rams, famous for his Braun products, published a list of criteria for good design. His “10 theses for good product-design” can be read as a moral treaty of design by clearly stating that design is much more than just an aesthetic and technically feasible venture (Rams 1995). Actively or inactively, the designer influences society by changing industry, consumer behaviour and people’s attitudes. Moral direction has to be given to students so that they can recognize real problems and attempt to solve them through a design process.

There exist some attempts to create a kind of Hippocratic oath for design. The webpage of the University of Berlin (www.oekologischer-eid.de) tries to do just that. Emily Pilloton, of Project H is author of “Design Revolution: 100 Products that Empower People”, where she includes a “designer’s handshake”, which can be torn out, signed and sent back to her, adding a certain weight of commitment (Pilloton 2009).

However, we believe it to be more efficient to focus on students. Only when a discussion of what distinguishes good from needless design and actual problems from arbitrary, constructed ones is thoroughly anchored in the curricula of design schools we can hope for a change. DPM at the *Salzburg University of Applied Sciences* has made a course like *Ethics and Sustainability* part of the curriculum.

Confrontation with underdevelopment: turning to the needs of the 90%

We believe that students of design urgently need to be confronted with all types of underdevelopment and have added a course called *Social Problems: Design Solutions*. Here we don't exclusively refer to the problems faced by "underdeveloped" countries, since even the most technologically advanced nations are in dire need of design solutions, as for example creating barrier-free cities accessible by handicapped citizens. Our syllabus pairs the likes of Thomas Malthus or Adam Smith with the design thinking of Christopher Alexander or Tim Brown. Attention is given to Amartya Sen's *capability* approach, which points out that while income inequality is an important issue, other non-income outcomes of well-being (such as nutrition or education) must be addressed with infrastructural changes (Sen 1999). Interdisciplinary research points to the role of institutions (for example, ineffective delivery of services) as another key driver of inequalities of material wellbeing (UNDP report 2013) and this should be part of any discussion on *service design*. In our department, students must turn to the needs of the other 90%. We are starting to see the fruits of our efforts and in recent semesters some of them have taken back their purpose and are trying to find design solutions to such problems as food waste and school furniture for children with emotional and behavioural disorders.

Place-based education: into the field

Students are much more likely able to understand the nature and relevance of a problem and are more likely to be motivated to solving it through a "place-based education" (Meichtry & Smith 2007:15-34). Such a stance has been tested and proved empirically (Gräsel 2009:855). Our students are required to conduct fieldwork in order to successfully complete their Bachelor and Master theses and some have left the streets of Europe and gone to such "exotic" locations as Kenya and South Africa for issues of water transportation and furniture in township schools, respectively. Obligatory design excursions will increasingly have destinations in underprivileged sectors of the world. Although there is a risk of making fetish out of problems, our aim is to witness first-hand actual problems.

Rigorous methodologies: the human sciences

Recommended by modern firms such as *IDEO* and *Microsoft*, obvious to social scientists, the designer has to be empathic. Ethnologist Francis Müller laments that designers are still not spending enough rigorous time in the field observing and interviewing real people (Müller 2011). Agreeing fully, we have labeled an entire module of the Master track *Design Research: Ethnography*, where students are taught *how* to do research in the field. We feel that a promising contribution to fieldwork is the *cultural probe* devised by design professor Bill Gaver, where a member of the target group is asked to actively participate in the research phase of a project (Gaver 1999). We encourage our students to use the systematic methodology known as *grounded theory*, and to construct hypotheses after conducting fieldwork. A student working on water transportation in rural Kenya has successfully used a variety of these techniques in her research on the Maasai.

After observation, the designer must try and understand *why* something is done and desired on the level of phenotype. The human sciences offer invaluable theory and data to do just that. For example,

Charles Darwin's theory of inherited variations that increase the individual's ability to compete, survive, and reproduce proves to be powerful (Darwin 2009). The field of behavioral economics can help in the understanding of individual market decisions as well as the mechanisms that drive public choice. The drivers for both may be the principles of natural and sexual selection (Miller 2009:1-18). The concept of artificial selection helps when trying to understand cultural evolution and trends (Shermer 2008:44-65). Products that impress aesthetically and functionally will likely be selected over others and sometimes first-to-market commodities mark a path dependency (Stack & Gartland 2003:487-494). The research of cognitive psychology and sociology also provide valuable insights to designers. Thus, the scientific method has become an intrinsic part of DPM's curriculum with such courses as *Anthropology and Design*, *Scientific Work 1,2 and 3* and *Cognitive Psychology*. Students have to design, carry out, analyze and present small scientific projects.

We are convinced that any good design needs to be tested on people and thus offer courses like *Introductory/Advanced Usability and User Experience* and *Introductory/Advanced Interaction Design*. In order to receive the highest mark for Bachelor and Master theses, students are actually required to add iterative user tests using models and prototypes.

Conclusion

Mankind seems to be undergoing a paradigmatic change and we find ourselves as the first generation that has the ability and responsibility to shape the future of all of mankind (Jakob v. Uexküll, in Kohr 2006). Perhaps the historians of tomorrow will look back at this point in time and realize that the means were there to change most current problems. It is up to the designers to use those means. Designers must develop sensitivity to real problems, realize the absurdity of "modern" production cycles, go out into the world, gain rapport and through participant observation become part of different tribes. In order to positively shape the future, design has to move from being a selfish endeavor to an altruistic one. By implementing the above changes to our curriculum, students seem to experience less *anomie* and *cognitive dissonance* and more sense of purpose.

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PEDAGOGY OF CRITICAL DESIGN LITERACIES FOR FAST-CHANGING FUTURES

Henry Mainsah

The Oslo School of Architecture and Design

Abstract

In this paper I argue that the complexities of today's world and the increasingly diverse areas in which design intervenes require significant changes to the design education curriculum at the higher education level. I argue that design professionals need a broad range of critical, analytical and conceptual skills related to the social, cultural, and economic context of design alongside advanced skills in a design specialty. I argue for the need to incorporate critical design literacies into design education curricula as an important step in adequately preparing designers for future challenges.

Keywords: *Critical literacy, critical design literacy, design education, curriculum.*

Introduction

Most people are now aware that we are in the midst of one of the most dramatic technological revolutions in history that is changing everything from how we work, to how we communicate with each other, to how we spend our leisure time. At the same time we are still in the process of understanding the consequences of time-space condensations; the speed of flows of goods, services, images and messages; the transnational reach of new cultural industries; and the migration and displacement of peoples within the context of globalization. The realities of a “networked economy” require that education focus on the connections between school and society, giving students exposure to a wide range of contexts, and experiences of genuine responsibility.

Poggenpohl (2008) argues that apprentice-master pedagogical models of learning and the development of exclusively tacit knowledge are inadequate resources for preparing the next generation of high-level design practitioners, teachers, and researchers. Today's design context requires more than formal aesthetic or technical skills. It also requires the ability to operate critically in an ever-growing information environment; a globalized economy; and inter- and multi-disciplinary teams. Design students are expected to receive training enabling them to intelligently respond to societal problems. Design's movement from the studio, lab and gallery, to the street, the square and our pockets is guided by mobile technologies and realised via the networked exchanges of mediated content and places new demands on design education.

This paper suggests that contemporary global complexities and the increasingly diverse areas of design intervention require significant changes to the design education curriculum at the higher education level. I argue for the need to incorporate critical literacies to the design curriculum as an important step in adequately preparing design students for future challenges.

Knowledge gaps

The accelerated rate of globalization, developments in media technologies and the information economy have profoundly affected design practice and education and thus new challenges confront designers. The variety and complexity of design issues has expanded resulting in the need for new approaches to conceptualizing design education.

In the early days of industrial design, the primary focus was on physical products. Today's design work, however, now encompasses systems, interactions, service, and experience design. Design is called upon to address issues ranging from organizational structure and social innovation to climate change and sustainability. Many of these problems are of a cultural, social, political and economic nature, and can be framed locally and globally.

The curriculum of the design school in which I work is built around developing bachelors and master's students' practical experience in a studio based environment, exploring tools and materials, as well as aesthetics and form. The students learn experimental and creative methods and different approaches to the design process. They take courses in design methods, computer-aided design and specific tool-based areas. Their other courses include drawing, wood and metal workshops, CAD, and a wide variety of tutorials on graphics, communication, interaction design, filmmaking, rapid prototyping and digital manufacturing in the lab. At the masters level they move on to specialize in Industrial Design, Interaction Design, or Service Design. As in all other professions involved with production, design students are introduced to a profession where they become designers of services, systems, products, and interactions wherein cultural meanings are produced and re-produced. By producing cultural meaning, they consequently engage in the design of social futures, workplace futures, public futures, and community futures.

Such a design curriculum is undoubtedly strong on providing students with knowledge on designing objects, interactions and services that delight, inform and are joyful. However, little attention is placed on addressing the effect of the economic, cultural, social, and institutional context in which design practice takes place or on teaching students to question the value system that endows some design approaches with greater importance than others.

As all other cultural producers designers have to embody culture to make artefacts and services that sell, in the things they design. Designed artifacts are there to do something, they are often functional, but, more than this, they are inscribed with meanings as well as uses. Thus in addition to creating artifacts with a specific function, designers are also in the business of making those artifacts meaningful. This means that design produces meaning through encoding artefacts with symbolic significance. It gives functional artefacts a symbolic form. Du Gay and colleagues (2013) call designers cultural intermediaries, drawing on the terminology of the cultural theorist Pierre Bourdieu (1984). The formal process of designing involves the replication of specific elements, such as standards, forms of knowledge, power relations, technical codes, and institutional structures. However design also makes new things possible when the expression of a design may manifest something that has not yet been realized. Design also involves a wide variety of expressive practices such as storytelling, sketching, sculpting, image making, storyboarding, semantic mapping, composing, and wordsmithing among others. Designers serve as cultural intermediaries by translating among languages, materials, and people to produce things such as taste, meaning, desire, and coherence

(Bourdieu 1984). Thus through the practice of designing, cultural beliefs are materially reproduced, identities are established, and social relations are codified.

Balsam (2010) argues that design innovation is better understood as an assemblage of materialities, practices, projections, and affordances, each of which contributes something to the overall meaning of the design. Some of the elements that contribute to the meaning of a designed technological artefact, for example, are recognizable as material objects such as tools and hardware devices. Other significant elements may be immaterial (e.g., codes and technical standards). But equally significant are the social elements that contribute the overall meaningfulness of a technology, including the social practices through which technology takes shape – the social rituals and habits engendered by new technologies. In addition, key infrastructural elements of the design process such as agents, representations, social negotiation and integration equally contribute to shape meaning as well.

Insights into these meaning making processes are rarely included into the curriculum offered to design students as part of their professional training. Students might for example gain a mastery of interaction design or filmmaking skills to produce apps or video prototypes without understanding the processes through which they convey meanings or values or the mechanisms through which users negotiate such meanings. They might acquire knowledge on how to create design tools for organising services for communities and businesses without understanding how these service tools implicitly construct users as customers or as citizens.

Critical literacies defined

The term critical literacy refers to the use of communication and knowledge tools to analyze, critique, and transform the norms, rule systems, and practices governing the social fields of everyday life (Luke 2004). Following Friere's (1970) educational projects in Brazil, approaches to critical literacy have been developed through cultural studies and critical linguistics as well as in feminist, postcolonial, poststructuralist, and critical race theory (Luke 2012). Friere drew from Marxism the argument that ruling class ideology defines school knowledge and ideology. By this view, knowledge produced and disseminated school sometimes involves a passive reproduction of knowledge. The focus of critical literacy is on ideology critique of the world portrayed in media, literature, textbooks and functional texts (Luke 2012). Critical analysis of economic conditions has been central to literacy campaigns led by Friere in Africa and the Americas (Kukendall 2010). Students are involved in analysis of the effects of capitalism, colonialism, and inequitable economic relations.

From a cultural studies perspective, critical literacy is concerned with how society and politics are structured and work to one's advantage or disadvantage (Kellner 1995) and how issues of ideology, bodies, power, and gender produce various cultural artifacts (McRobbie 1997). From a feminist pedagogical perspective, critical literacy focuses on how cultural texts and artifacts function to produce certain relations of power and gender, class, race, and generational identities that students may learn to use or resist as part of their everyday school experiences.

Critical literacy is an overtly political orientation to teaching and learning and to the cultural, ideological, and sociolinguistic content of the curriculum. Its emphasis is on the uses of literacy for social justice for the marginalized and the disenfranchised and it has the explicit aim of critiquing and transforming dominant ideologies, cultures, economies, institutions and political systems. As a practical approach to curriculum design, it melds social, political, and cultural critique with the analysis

of how where, with what consequences, and in whose interest, texts, discourses, artefacts, services, systems, and institutions work.

In schools and universities, these approaches also focus literacy on communities and the analysis of social movements, service learning, and social activism. They also involve the development of critical media literacy, focusing on the analysis of popular cultural texts including advertising, news, broadcast media and the Internet (Kellner and Share 2005)

Critical literacy proposes an alternative that begins from learners' worldviews, in effect turning them into inventors of the curriculum, critics and creators of knowledge. In such a setting, traditional authority and epistemic knowledge relations of teachers and students shift. Learners become teachers of their understandings and experiences, and teachers become learners of these same contexts.

Critical design literacies

Drawing on the concept of critical literacy as outlined above I wish to argue that there is need to include what Craig Watkins (2010; 2012) terms *critical design literacy* in the curriculum of design education. Critical design literacy combines the pedagogies of the academic design studio with insights from critical literacy. Such a critical design literacy model aims at training students to become literate in critical thinking and critical designing. Rather than seeking to produce designers as good, loyal, and dutiful citizens, it strives to create engaged, critical, and future-building designers and citizens. Critical design literacy also challenges the notion that the only role of design schools is to prepare students to get jobs in the global economy. Critical design literacy strives to do more than prepare students for participation in the economy; it strives to prepare students for participation in their community and society.

Ahn and Poggenpohl (2002: 55) draw on The International Council of Graphic Design Associations' (ICOGRADA) design education manifesto created in Hong Kong with an international group of designers to argue:

Design education should focus on a critical mentality combined with tools to communicate. It should nurture a self-reflexive attitude and ability. .the power to think the future 'near or far' should be an integral part of visual communication design. A new concept in design promises to tune nature, humanity, and technology, and to harmonize east and west, north and south, as well as past, present, and future in a dynamic equilibrium.

Friedman (2012) argues that today's challenges require a qualitatively different approach to professional practice than was needed in earlier times. Most of today's design challenges require analytic and synthetic planning skills that can't be developed through the practice of contemporary design practice alone. Today's professional design practice, Friedman observes, involves advanced multi-disciplinary knowledge that presupposes interdisciplinary collaboration and a fundamental change in design education. A higher level of professional education and practice no longer suffices. He thus suggests that in order to serve human beings, design education must foster skills and knowledge to develop a mastery of human engagement based on ethics and on care.

Similarly, Don Norman (2010: 1) argues that:

In today's world of ubiquitous sensors, controllers, motors, and displays, where the emphasis is on interaction, experience, and service, where designers work on organizational structure and services as much as on physical products, we need a new breed of designers. This new breed must know about

science and technology, about people and society, about appropriate methods of validation of concepts and proposals. They must incorporate knowledge of political issues and business methods, operations, and marketing ...We need new kinds of designers, people who can work across disciplines, who understand human beings, business, and technology and the appropriate means of validating claims.

Poggenpohl and Ahn (2002) argue that theory and design history should be integral parts of design education. Design research should increase the production of knowledge in order to enhance design performance, as well as social and cultural factors. They argue that more than ever, design education must prepare students for change.

In the current context design education needs to give students the capacity to understand, critique, and transform the social and cultural conditions in which they live, gaining capacities to be creative and transformative subjects and not just objects of domination and manipulation.

Conclusion

The concept of critical design literacy and pedagogy that I envisage is not a question of either/or, that is, either design literacy or critical literacy, either teaching students the skills for creating artefacts, systems, interactions and services or critical analytical skills. It is, rather, a question of both/and that preserves the best from the classical design education curriculum and develops new literacies to engage the new social, cultural, economic, and political contexts in which design is immersed. The social realities in which today's design students are immersed are more multidimensional than ever.

As a form of critical literacy, the critical design literacy that I propose in this paper is by definition, a historical work in progress (Luke 2012). There is no correct or universal model. Critical design literacy entails a process of naming and renaming the world; of seeing its patterns, designs, and complexities, and developing the capacity to redesign and reshape it (New London Group 1996). How design educators shape and deploy the tools, attitudes, and values of critical design literacy will I expect vary from context to context. It would depend upon students' and teachers' everyday relations of power, their lived problems and struggles, and on curriculum designers' professional ingenuity in navigating the local contexts of design pedagogy. I invite the readers of this paper to consider the implications of introducing such a critical literacy component in the curriculum of design education in higher education. I wonder what types of issues might come up if such new critical design literacy were to be integrated into the traditional academic design studio pedagogical model.

Schön defines the design studio as a 'reflective practicum in designing' and the practice of design as 'a reflective conversation with the materials of the situation' (1988: 4). I suggest that in relation to the future of design education this 'reflective conversation' needs to move beyond 'the materials of the situation' to grasp the wider symbolic processes that frame design practice.

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DESIGN FOR INCREMENTAL MINDSHIFTS

Shahrezad Morssal

Parsons The New School

Nada Seet

Freelance Designer

Abstract

The emerging human-centered, anti-hierarchical, participatory western processes of social design inspired us to investigate what it may look like if design for good was practiced in more traditional cultures of the east, particularly Saudi Arabia. By using the flawed educational system as a case study, this research focuses on translating design for change in a more subtle and cautious method where it becomes an accepted part of the culture rather a radical change to it. Going back in history, hundreds of years ago and looking into other cultures we have found examples of how incremental changes helped populations feel empowered, therefore strive to survive, while respecting the cultural context they existed in. Saudi Arabia is a country, like many other culturally conservative countries, which we acknowledge as a complex system. However, being from there we understand its complexity from both a personal and cultural perspective. We have identified a need for a philosophy that translates these processes into a subtle, respectful, and interdependent model of design practice that leverages cultural constraints and values societal boundaries. Thereby in this paper we unravel the process and reasons of renaming Design for Change to Design for Incremental Mindshifts.

Keywords: *Typically three to five keywords should be taken from your submission, given in 10 pt italic Arial, justified, with 15 point line spacing.*

Introduction

Brainstorming

The culture of Saudi Arabia is a rich one that has been shaped by its Islamic heritage. In a 2011 survey, 69 percent of 200 Saudis aged 18-24 agreed: “traditional values mean a lot to me and ought to be preserved.” (Murphy 2011) According to Lucas Winter [n.d.], an analyst at the Foreign Military Studies Office, Saudi citizens and residents avoid publicly disapproving of their culture or laws due to the conservative and self-policing nature of their interdependent society. Richard Nissbet (2003), in his book *The Geography of Thought*, states that even if some people’s upbringing did not incline them in either an independent or an interdependent direction, their surroundings would make them behave in interdependent ways. In other words, Saudi’s would rather take actions collectively, prefer to blend in harmoniously, and accept hierarchy in their daily lives (Nisbett, 2003), which in turn would pressure individuals to conform or turn to anonymous expression (Winter [n.d]) rather than to demand personal or civil rights.

So now we must think: what might design for social change look like in a country similar to Saudi Arabia? Our research investigates how the emerging anti-hierarchical processes of social design in

the western world might translate to the cultural contexts and constraints of more traditional cultures of the east.



Figure 1: Subtle, respectful and interdependent model of design

Using the suppression of creative and critical expression in Saudi Arabia as a case study, we have tested a philosophy that translates these processes into a model of design practice that values and leverages cultural constraints and does not threaten the boundaries with which society is comfortable (information graphic 1).

Research: Learning the Power of Design



Figure 2: 2009 floods in Jeddah, Saudi Arabia source: <http://xrdarabia.org/2011/01/26/rains-again-flood-jeddah/>

When we began to consider this research, our minds would return to the tragic 2009 floods in Jeddah, Saudi Arabia (figure 2) and the unusual incidents that took place that day. Shockingly, dozens of furious Saudi citizens from all around the Kingdom took on to Facebook and Twitter to publicly blame the government for the floods that hit Jeddah, killing hundreds of people, displacing thousands of families, and damaging cars and streets (AlMalki & AlSharif, 2009).

Although this incident kept many feeling helpless, Caryle Murphy (2011), in her paper “Saudi Arabia’s Youth and the Kingdom’s Future,” writes that “the slow government response to this tragedy kick-started a spontaneous movement among young Saudis to help rescue stranded people and assist those left homeless.” This effort brought together 800-1000 volunteers, mostly youth, from Jeddah and neighboring cities per day with donations from all over the country (Nisbett 2003).

A week after the disaster struck, and it was safe to go back to school, our branding teacher, Areej Khan, a graduate from SVA with an MFA in Design, saw how helpless and hopeless we felt. The

project she would give us that month was one to make us feel empowered, inspired and important. She put us into teams and asked us to design an organization that would provide a quick solution in case Jeddah flooded again. Through creating an identity for our hypothetical organization, we were able to use our design skills to solve a real world issue. We were able to shift our mindset and truly believe that we, also, could temporarily fix the problems we unwillingly encountered and suffered from.

Testing the Power of Design

After grasping the true meaning of design and how powerful it made us feel, we wanted that same feeling for all the youth in Jeddah, which make up two-thirds of Saudi Arabia’s population (Murphy 2011).

So, we began by investigating the power of communication design and the role it may play in giving youth the agency to solve local problems or identify local opportunities. After a couple of prototypes, we were able to get a better understanding of how youth define creativity and where they identify themselves to fit on that spectrum. These prototypes were activities that challenged the participants—all young women living in Saudi Arabia who were not from “creative” backgrounds—to visualize certain phrases or feelings, like “visually communicate who you are today vs. who you wish to be in the future.” (figure 3). We were surprised to find that 17 out of 20 participants identified themselves as “non-creative” and defined creativity as a trait one is only born with.

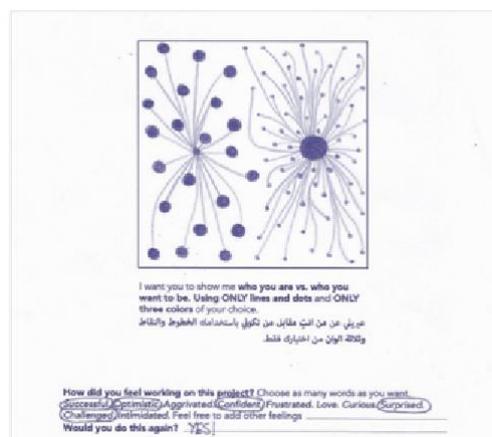


Figure 3: Participant, Razann, a 17 year old Saudi girl who identified herself as “non-creative” was surprised to find a creative visualization of who she sal herself to be today vs. who she aspires to become. She said “I am always inspired by people (left) but I wisht to be an inspiration (right).

Tom and David Kelley (2013) state, “people’s imagination, curiosity and courage are renewed with just a small amount of practice and encouragement”. And that is what we aspire to create; an environment that fosters creativity but also motivates it.

Thus we began by looking into existing cultural platforms in Saudi Arabia through which we could introduce critical and creative thinking. And through observations and personal experiences, we have found that games are one way Saudis are free to make creative choices without the fear of getting in trouble. Mary Flanagan (2009) in her book *Critical Play* puts it beautifully when she states “playing games enhances the benefits of repetitive performance, mobility and empowerment to make decisions. Players are encouraged to make metaphorically large decisions through play.”

Designing the Power of Design

We began our research with the assumption that what stops Saudi citizens from making changes is their fear of the government. For instance, when activists tried to plan a “Day of Rage” on March 11, 2011 to protest in the capital, Riyadh, although 34,000 people indicated support on Facebook, very few protesters appeared because the city was filled with police. According to Lucas Winter, “the reason nothing of significance occurred in Saudi Arabia by angry Saudis is due to the Kingdom’s low level of tolerance for open dispute. The 2011 Arab Spring failed to break the barrier of fear to protest in Saudi Arabia, and people saw it safer to express their opinions on Facebook and Twitter.” (Winter [n.d.]).

However, we found our assumptions to be incorrect when we conducted interviews with more than fifty fellow Saudi youth, and learned that two major factors discourage them from making changes: one, their inability to find a balance between being critical but respectful of the cultural constraints; and two, their fear of disrespecting their family’s cultural beliefs and values.

Brian Sutton-Smith, a play theorist, notes that the attributes of game-playing is that it’s “fun, voluntary, naturally motivated, incorporates free choices or free will; offers escape; and is fundamentally exciting.” (in Flanagan 2009).

We collaborated with a team of designers born and raised in Saudi Arabia, and we designed a storytelling game that we play-tested with about 250 men, women and children living in Jeddah, Saudi Arabia (figure 4) at an Acumen fundraising event. It challenged two teams of four players with a problem to solve in three minutes; each player had an assigned skill, and obstacles were thrown their way every thirty seconds by the facilitators.



Figure 4: Players and facilitators are having fun but also concentrating to solve the problem they were presented with: “A graduate student’s laptop was stolen 3 hours before his final project submission”.

It was a great night filled with creative solutions to realistic and imaginative scenarios. The feedback we received was positive. However, everyone at the event were people from creative and liberal backgrounds—the “minorities” of society—such as local comedians, musicians, news reporters, artists and designers. As Caryle Murphy (2011) concludes, the “presence of Saudi youth who are progressive and pro-change on Twitter, YouTube, and in the blogosphere might lead one to conclude that all young Saudi people think that way. But that is not so. Many are socially conservative and very traditional in their views, which they also voice in cyberspace.” We were thus forced to consider how

this platform could be made available to diverse groups, including the more conservative and traditional youth—the “majority.”

Suitable Space Discovery

Schools and universities are very diverse spaces, and that is why we chose to narrow our project’s point of intervention and focus on the Saudi Arabian education system and how it has always been criticized as a system that stifles critical thinking. Likewise, educational institutions are faulted for not fostering innovation and creativity (Education in Saudi Arabia 2014). Students are taught to never be curious, never question, and believe only what they are taught. In this context, we asked, how can critical and creative thinking be practiced in educational institutions?

Psychologist and Stanford professor Albert Bandura has shown that our belief systems affects our actions, goals and perceptions. Individuals who come to believe that they can effect change are more likely to accomplish what they set out to do (Kelley & Kelley, 2013).

Change vs. Culture

Deep down everyone wants to change the world, but not everyone can boldly and loudly make change. From an anonymous online survey sent to 100 men and women living in Saudi Arabia, we have found that only a small percentage stated that “there is nothing to change,” while over 50% stated that they identify points of intervention but are skeptical of intervening because they are discouraged by their families and society.



Figure 5: Sarah Attar source: <http://dailym.ai/1rpIVNC>

There are many changes happening in Saudi Arabia, especially for women (figure 5). Last year, women were given permission to ride bikes in public with a male guardian and fully covered (Carey & AlMashabi 2013) and in 2012 two young Saudi women participated in the Olympics for the first time (Saudi women participate in Olympics 2012). Even though these may seem like small changes to many, and we all know there is still a long way to go, such advances will pave the way for bigger changes—especially for women.

Prototypes: Change & Culture

Thinking about the lessons we learned from our first prototype (that they need to be more exposed to critical and creative thinking in a culture that is not very accepting of it), we could not help but think of the beautiful Filipino martial arts dance (figure 6). In 1583 the Spanish laws in Philippine Islands banned the Filipino Islanders from practicing all forms of martial arts, their strongest defense

mechanism. That ban forced the Islanders to develop a performance that incorporated their fighting movements into a dance that allowed them to hide their secret practice of martial arts and self-defense from the Spanish (The Origin of Filipino Martial Arts [n.d.]).



Figure 6: SAYAW, the Filipino martial arts dance. source: http://www.filipinobooks.com/sayaw_dances.htm

This got us thinking: could not critical and creative expression be practiced in atmospheres (like schools) that do not encourage creativity, in the disguise of a game? Could not this give youth the agency to express independently, creatively, critically and respectfully in an interdependent society, and thereby challenge existing ways of solving problems?

Researchers investigating the meaning of play in relation to creativity have defined play as a deliberate and conscious expression of freedom from ordinary life. And it is a creative mindset by definition, because it necessitates awareness of possibilities and of surprise outcomes (Rochat, [n.d]).

We were fortunate to co-design a revised version of the game with Alaa AlHijaili, a psychology teacher at King AbdulAziz Public University in Jeddah, with an MA in Education and Community Counseling, who tested the game with 100 of her students that come from conservative families. The students were given a mission of convincing Shareefa of the benefits of women driving in Saudi Arabia. The players won the game if they successfully completed their mission and used all their cards (figure 7).

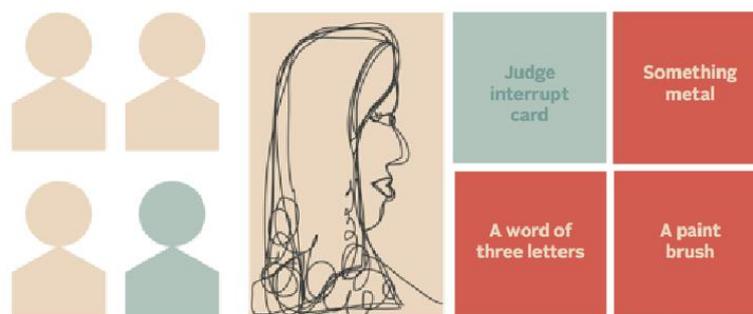


Figure 7: The figure explains how the game was played. One each team there were 4 players, three storyteller and one judge. The judge has interrupt cards that allowed them to interrupt the storytellers, while the storytellers tried to solve the given scenario with the three objects cards.

The teacher's observation was that her students struggled to convince Shareefa because they were against women driving, but the anonymous online survey proved otherwise. 45% of the students

support women driving and 91% stated that playing the game helped them realize that using creative thinking could be essential to making personal or societal changes. And only 31% failed to convince Shareefa.

The next iteration of the game included more relatable and acceptable topics, cultural and non-cultural, that forced the students to make imaginary life-changing decisions. Students reacted positively to the relatable scenarios and enthusiastically solved them. One student said, “I was able to convince Wijdan; therefore, I’m a creative thinker.” And we believe with more playtests we will be able to measure the long term impact of it, because not only does a game allow for creative liberation from the highly constrained possibilities of being in everyday life, it also allows for repetitively practicing creative thinking (Rochat [n.d]). Psychologist Jerome Bruner speaks about the exercise of problem solving and the effort of discovery that allows one to learn the working heuristic of discovery: and with more practice you are able to generalize what has been learned into a style of problem solving or inquiry that serves for almost any kind of task you may encounter (Williams-Rossi 2009). That is precisely the kind of practice we imagine this platform doing.

Platform: The Game



Figure 8: Packaging of the game

Hillouha is Arabic for Solve it. It is a storytelling card game that provides youth with a platform that allows students to unleash and practice their creative capacities by solving problems. It is divided in cultural and general topics according to what the teacher deems appropriate (figure 8).

Groups should consist of six players. With two storytelling teams of “solvers”, with two players each, that will be competing against each other, and two judges with obstacle/disturbance cards that they must give to the story-telling teams to challenge their solutions. The team that solves the problem and finishes all their cards in less than two minutes are the winners.

Conclusion

Cultural Observations

Although fostering critical thought about local issues might be encouraged in the schools or public spaces of the west, it isn't in Saudi Arabia. Tom and David Kelley (2013) put it beautifully when they state that “there are certain forces that can push us towards reaching our creative potentials, like a teacher’s compliment or a parent’s tolerance for tinkering, but most importantly an environment that welcomes new ideas and it is very important for a person to believe in their own capacity to create positive change and have the courage to take action.”

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state that “there are certain forces that can push us towards reaching our creative potentials, like a teacher’s compliment or a parent’s tolerance for tinkering, but most importantly an environment that welcomes new ideas and it is very important for a person to believe in their own capacity to create positive change and have the courage to take action.”

We believe through practicing a model of design for social good in a way that is incremental, respectful, and interdependent, we, and other local designers, can design within the bounds of propriety in Saudi Arabia but still nurture critical thought. Although Saudi Arabia’s design community is very small and limited to graphic, interior and fashion designers, many of them, like me, are tired of the limits of the design industry and have identified better use for their creative skills.

Observation to Action

Our strategy is not to make radical change, but instead to design within certain cultural constraints to make incremental change at a personal scale. Because although design in Saudi Arabia may not have a direct impact, it creates an atmosphere, and we believe *Design for Incremental Mindshifts* in the design industry will create a shift to an atmosphere of tolerance.

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SOCIALLY RESPONSIBLE NEXT-GEN DESIGNERS

Vuyolwethu Motingoa

Greenside Design Center

Abstract

The First things First manifesto appraises the generation of designers who have applied their skills to being nothing more than pixel pushing drones; consumer, capitalist, and money driven designers – with no regard for social responsibility. The notion that design is nothing more than a commercial tool has completely lambasted the aura of design, as both a profession and a skill set. As part and parcel of the future generation of designers, about to enter the work force, there are specific sets of attributes which one could summatively phrase as the Designers Handbook to Social Responsibility –an exploration into the attributes (possible attributes) of Post-Graduate designers. In an attempt to salvage what is left of the image of design, transforming it back from the “slut” it is being referred to now, into an attainable utopia of socially responsible designers. Using both the original First things First manifesto as well as the updated 1999-2000 by Rick Poyner and, 2014 version by Cole Peters versions. We are able to both successfully pin point several attributes of the Next Generation Designer. Challenging their notions of design, social responsibility, and using the skills they’ve been taught; what kinds of designers they would like to become.

Keywords: *Design Undergraduate, Social Responsibility, First things First, Ken Garland.*

Introduction

‘We don’t need no education. We don’t need no thought control... Hey teacher leave them kids alone!’
Pink Floyd (1979)

‘All in all you’re just another brick in the wall’ Pink Floyd (1979). In an era where a large majority of the world’s population comes into contact with some form of design on a daily basis, the question lies in whether the designs we encounter are designed for just another brick in a wall or if they genuinely have our best interests at heart. Regardless of which ever is true, they all start off as the same entity. There are a million different ways one can tackle mainstream design education and the content of their syllabi. The aim here is take the core values of the *First things First* manifesto in conjunction with the state of design in 2014 and create a utopia of design education. Using two case studies one on Greenside Design Centers annual socially responsible outreach program; 10Percent, as well as small focus groups of statistics collected from various design students in and around the Johannesburg, Gauteng, South African, to conclude the perfect Designers Handbook to Social Responsibility –an exploration into the attributes of Post-Graduate designers.

First things first

‘We, the undersigned, are graphic designers, photographers and students who have been brought up in a world in which the techniques and apparatus of advertising have persistently been presented to us as the most lucrative, effective and desirable means of using our talents. We have been bombarded with publications devoted to this belief, applauding the work of those who have flogged their skill and

imagination to sell such things...' Ken Garland (1964). There are today currently three *First things First* manifestos, 1964 by Ken Garland, 1999-2000 by Rick Poyner and Various other Authors, and in 2014 by a Canadian-born designer Cole Peters. As design and the role it plays in society has changed over the years, designers have found themselves needing to stay ahead in their skill set, but also in what their role is in the social schema of their profession. All of the versions sought out a '...challenge to seek out meaningful, human-centered uses for our abilities as creative professionals, and to put people and ethics before profit and corporations' Peters (2014). The power designers hold in their hands is beyond measurable. We create the visual culture people interact with on a daily basis. We influence what brand of washing powder they buy, and what movie they should go watch. This isn't the only way to use this skill set. The *First things First* manifesto is where design should begin. It's less a document that represents the society of designers the have participated in writing it, as well as its various signatories, but rather a call to action for designers/creative professionals/average Joes to take a stand and move away from a capitalist mindset.

Design in 2014

'The traditional understanding of design focused primarily on the end products of design and within this context, design was often treated as a late-stage add-on final step in the innovation or development process, where the designer was usually called on to 'put on a beautiful wrapper around the idea' Tim Brown (2008:86). There is a marginalized population of designers who conform or rather consider sustainable and responsible design in their work. Who sacrifice money and reward over really benefiting a community, or a cause in need to design related solutions. And an ever smaller audience who actively participate in this responsible type of design; they either do not know it even exists, or they just don't care. To begin to problematize this image of design both internally and externally is to begin to scrutinize it from an educational level. There is very little effect when ideals of social responsibility are implemented post undergraduate level. 'Students are presented to the world, and expected to engage that world, before they are ready: possibly doing more damage than good' Galtung, and cited by Rose Mandoza & Tom Matyók (2013:217)

In our education systems

There is a shift in ideals in which the 'question is much more: 'will this get me a job' rather than 'will I be a responsible participant in the world around me' Mandoza & Matyók (2013:218). There is a nuance between teaching design and teaching people how to design. The former while still a kind of education lives within the realms of education parallel to the *First things First* manifesto. While morals and values cannot be taught, a sense of responsibility can. A sense of responsibility geared towards using our skill sets and talents towards the betterment of a society. The difference between this form of education and teaching a student how to design, is simply supplying them with the skill set to use their talents in a service driven industry. Design education regardless of what shape or form plays a pivotal role in laying a solid foundation to excel beyond the reactive state they're towards a point where they are actively engaging in shaping the world around them Mandoza & Matyók (2013:215). I have conducted two case studies in an attempt to both formulate the utopian designer, as well as illustrate where mainstream design education falls short.

Design for the other 90%

Greenside Design Center's (GDC) 10Percent initiative, which borrows 10% of the years teaching time donated to a community project requiring some or other design intervention. Students select which

ever project they feel their skill set would be best suited for, and at the end of the project design solutions are proposed that are both socially responsible as well as sustainable.

Kgantsha Ho Kganye 2012

The Kgantsha project which was run by GDC in 2012 sought to help out a pre-existing project which was non-profit public art organization that aimed to create recreational spaces for the youth of South African townships. For 10Percent GDC in conjunction with the Kgantsha organization volunteered their time to helping Thabisang Primary School just off of Vilakazi Street in Soweto. The project focused mainly on the schools media center which doubled as a classroom. The center was already equipped with computers and monitors, books, desks, and seating with desks for the classroom. What GDC and Kgantsha sought to achieve at the end of the project was to create a comfortable, relatable learning space for the kids of Thabisang Primary.

The project was split into four mini-projects that needed to be addressed in the space; space, library, networking, and liaising. The space group focused on creating a functional working area for the media center. Which meant moving things around, creating moving systems that kept the classroom and the media center spaces work as a unit yet at the same time work as separate entities. This group was also in charge of the upcycling of goods and materials they no longer needed after re-designing these spaces. Stools were fashioned from books that were left over from the library spaces, as well as little decorative pieces to put on the tables also fashioned from old books. The library group's role in this project was to create a library system that would make it easy for the kids to find the books they needed. Essentially what this entailed was creating card systems so that the books were categorized into their various genres and subjects. As well as creating an inventory system that would be used by the librarian to locate said books. Amongst all of this, the networking group's job was to firstly assess the state of the computers the school still had, as well as to determine whether they were still salvageable or not. Their job was to network all of the computers as to create/make files accessible from any computer by simply using the main server with would the librarian's computer. In order to do so they had to collaborate with both the space and the library group. Firstly working in conjunction with the space group meant knowing where these computers were going to be place in relation to the new space. Adjustments had to be made to pre-existing desks and bookshelves needed to be removed in order for the space to function. The library would make it easy to assess where information was located, how it was categorized and how that would be reflected on the computer systems.



Figure 1: Images of the 10 Percent work taken off their website

However the most important aspect of this entire project was the people in charge of forming foundational communications with the Kgantsha project. In order to assess what it was exactly that they needed and how we as GDC could have been of assistance. What is imperative in a community based projects such as this is a dictum often used in South African townships 'Umuntu Ngumuntu Ngabantu' literally translating to 'someone is a person through other people', which is to say there is strength in numbers. Working in an initiative such as 10Percent those core values are really what stand out, the fact that we as a whole make a difference within communities.

What the project ended up being was working systems for the community they were currently dealing with, as well as infographics so these systems could be applied to other schools, in doing so creating a lasting snowball effect in sustainable design, leaving a lasting impression both on the community as well as the students who participated.

What is being churned out?

A small focus group was conducted to assess students understanding of what design was, what social responsibility was, and how their current institution had affected both those answers. Half of the focus group's answers as to what 'design is' were in line with the foundation Garland had laid out, but of those who knew what their skills were capable of doing only a few felt to actually make a point of formulating a career out of those values. Out of the same focus group again half of the group knew what 'Social Responsibility' was; "taking into consideration the greater impact of your actions. Thinking of how you are able to change situations for the better... It is when you begin to think of more than just "me"" Caitlin Ward (2014), but still only a select few felt the need to make a point of becoming socially responsible designers. Four students stated that their current institutions played no role in formulating their answers, with one having dropped out due to the lack in proper or rather adequate education. It's easy to criticize mainstream education for not teaching alternatives to design education and a variety of avenues. This new breed of designers who soon will apply themselves

'Toward the creation of trivial undifferentiated apps; disposable social networks; fantastical gadgets obtainable on by the affluent; products that use emotion as a front for the sale; and insular communities that away potential collaborators and well-grounded leaders' Peters (2014).

There is however an alternative to this kind of designer.

Socially responsible next-gen designers

'The next generation of students to graduate will find a workplace that requires them to respond to problems that do not exist yet using tools that we cannot imagine' Mandoza & Matyók (2013:218). In order to create this 'perfect' next generation of designers, I have categorized these moments into three basic systems that will instill some form of responsible design; Identify, (Re) Identify, and Contextualize.

Identify

Focuses around the way design as a profession is currently being both viewed and represented. We as designers have become nothing more than 'sluts' who help drive a commercial agenda – not to slander those whose chosen field is advertising. But there is a great deal of respect and responsibility handed over to someone once they see themselves as 'I' the designer. Identify deals with classifying every conceivable aspect of design that is morally – on a broader scale – incorrect, in an attempt to rectify the situation. This however is impossible before we have defined ourselves within this grand scheme which we call design.

(Re)Identify

Setting ourselves apart from either the industry as a whole, from our internal agendas as designers, and from our institutions of learning. Regardless of the fact that the designers this paper aims to target are yet to graduate. At some stage in their final year there needs to be a break from 'I' as designer from my institution – essentially taking the lessons learnt and creating new avenues to make these skills possible.

Contextualize

'Designers oriented in this direction are concerned less with persuasion and more with information, less with income brackets and more with physiology, less with taste and more with efficiency, less with fashion and more with amenity. They are concerned in helping people to find their way, to understand what is required of them, to grasp new processes and to use instruments and machines more easily' Kinner (2000).

This is what the breed of next-gen designers should be like. However much like most final frontiers, they all begun with baby steps. There cannot be responsible next-gen designers without a next-gen designer groomed from first year. This is where socially responsible education should start.

Conclusion

There will always be a newer, cooler kind of designer out there. The kinds that bring forth innovative mind blowing technologies and works, but it's all a waste if those designers do not hold their own weight when it comes to the betterment of society. The next-gen designer proposed isn't a revolutionary concept, he already exists – however in a marginalized number. What I am proposing is next-gen designers being given wings from a first year level. Alighting the course material to real life problems, requiring real life solutions, still using the same skill set as those who are being taught solely how design. It is initiatives like GDC's 10Percent project that should be implemented as full course material. Aligning this kind of teaching parallel to the *First things First* manifesto, surely we will be able to give birth to a next-gen designer who'll end world hunger – or at least try.

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DESIGNING FINANCIAL LITERACY WITH THE OTHER 90%

Carol Overby

Parsons The New School for Design

Jennifer Wilson

The New School for Liberal Arts

Aaron Fry

Parsons The New School for Design

Abstract

Financial literacy is widely recognized as being of vital importance in helping to stabilize economies at national and global levels, through strengthening individual and household financial resilience. However, financial education efforts have often emphasized financial concepts and information rather than the emotions, beliefs and cultural factors that drive financial decisions and behaviors. A notable feature of several financial literacy initiatives in the developing world is that the skills, attitudes and behaviors needed to make sound financial decisions are recognized as being (at least) as important as consumers' base financial knowledge and information. Recent and ongoing studies of some of these programs have identified the use of metaphor, storytelling and "entertainment education" as effective strategies for financial literacy. However, these studies have not examined best practices in the creation and evaluation of the design of financial literacy materials. Since 2009 the Visualizing Finance Lab (VFL) at Parson The New School for Design has studied and assessed behaviorally-oriented financial visualizations, adopting the term "Narrative Visualization" to identify those that use visual metaphors and culturally-relevant storytelling to communicate financial concepts and behaviors. To help in the development and assessment of Narrative Visualizations, the VFL has developed the "InfoEmotion Matrix", a tool for evaluating content and design elements across a rational-to-emotional spectrum. Here we apply the InfoEmotion Matrix to some examples of Narrative Visualizations used in financial education in several African countries, to identify the design and content elements that convey useful information and appropriately depict financial behaviors. In addition, the VFL asserts that co-designed Narrative Visualizations, guided by tools like the InfoEmotion Matrix, can provide a framework, enabling designers, policy-makers and economists to engage with targeted community groups as partners in the development process of financial education materials.

Keywords: *narrative visualization, financial literacy, storytelling, visual metaphor, behavioral economics, co-design.*

Introduction

Financial literacy is widely recognized as vital for the stabilization of economies, through strengthening individuals' and communities' financial resilience.

"... policy makers around the world... advocate increased expenditure on literacy education, in hopes of increasing household savings and increasing financial market participation, with the ultimate goal of reducing poverty and improving welfare." (Klapper and Hasnain, 2009)

The goals of “reducing poverty and improving welfare” clearly apply to individuals in the lower part of the economic 90%: their moderate-to-low financial resources make them particularly vulnerable to costly and preventable financial decisions, and they stand to benefit most from well-designed and well-targeted financial education.

The strategies and aims of financial literacy programs vary greatly across nations. In higher-income countries, governments’ and financial-institutions’ initiatives (e.g., Money.gov and WiseUp in the U.S.) have focused on increasing knowledge of financial concepts, and on encouraging saving and retirement planning. In contrast, many efforts in low- and moderate-income countries address the broader range of everyday skills important to the economic 90%, and focus on instilling a culture of responsible spending, borrowing and saving. Some of these programs—particularly in Africa—have embraced the findings of behavioral economists, which indicate that acquisition of financial knowledge is less important than changes to financial behaviors (Yoong, 2011).

“Traditional attempts at behavior change were based on a ‘rational person’ model, where it was believed that giving the average person information will move that person closer to choosing the correct behavior. New insights from behavioral economic psychology and other related disciplines suggest, however, that behavior change is not so simple, but rather a nonlinear process that requires more than simply receiving compelling information.” (The World Bank, Sa: sp)

This understanding of financial decision-making has influenced several financial education programs in Africa. These initiatives have focused on creating programs that reflect cultural understandings and beliefs, and that acknowledge the complicated emotional relationships that individuals and communities have with money.

In this paper, we analyze three examples of African financial literacy materials from design and behavioral-economics perspectives. Although they vary in design strategies, format and origin (an NGO, a financial institution, and a television network), all three incorporate emotional, cultural and behavioral factors. A recently-developed tool, the InfoEmotion Matrix (Fry, Wilson & Overby 2013:1242), helps us examine how these factors are embodied by the developers’ design choices. We conclude by proposing the matrix as an aid to co-design: a methodology for developing financial literacy materials with the other 90%.

Part I Behavioral economics and African initiatives in financial literacy

As noted in the World Bank quotation, insights from behavioral economics challenge the neoclassical economics model that individuals always act “rationally”. Research has found that individuals’ financial behavior is mostly driven by emotions, beliefs and culture rather than the rational thought processes previously assumed. For example, people’s limited attention causes their decision-making to be disproportionately affected by the most recent or most apparently relevant information (Yoong 2011). Limited attention can also increase individuals’ tendency to collect and retain information that reinforces their already-held beliefs or understandings (Mullainathan & Shleifer 2005:1041, referenced in Yoong 2011). In addition, financial and economic behaviors vary widely across cultures (Henrich et al.:798), implying the importance of cultural factors in financial education. Kahneman (2003, 2011) describes the system of thinking characterized by intuitive and emotionally-inflected beliefs as predominating in financial decisions over the analytical reasoning system implicit in neoclassical economics.

Materials for financial education, especially in higher-income countries, have tended to present information and explain concepts, rather than contextualize the financial concepts within the belief systems and cultures that actually drive financial decisions. In part, this is because it is much easier to assess programs' effectiveness through increased content knowledge rather than long-term changes in financial behavior. Recently, however, researchers (Yoong 2013) have developed better tools for assessing financial behaviors and the effectiveness of financial literacy programs that incorporate behavioral factors.

Financial literacy programs in low- to middle-income countries face the additional challenges of low literacy and inconsistent access to financial information and institutions (Messy & Monticone 2012). In a 2012 World Bank conference titled "African Regional Dialogue on Financial Literacy and Capability" (The World Bank 2012), participants identified several methodologies to address these challenges:

- entertainment education
- school-based curricula
- innovative technology-based solutions.

Note that visual communications play important roles in these approaches.

Here are some African initiatives that exemplify these methodologies:

1. "Teach Children to Save": an educational initiative targeted at school children and communities in Nigeria, funded by the NGO Financial Literacy For All. Materials include comics, and "ant banks" distributed to children. https://www.facebook.com/TeachChildrenToSaveInitiative?hc_location=timeline
2. *Scandal*: a South African soap opera with a three-month plotline focused on financial difficulties of low-and-moderate-income South Africans. <http://www.tvsa.co.za/shows/viewshow.aspx?showid=2726>
3. "On the Money": a financial education program created by Old Mutual PLC (South Africa), with materials based on metaphorical characteristics of five trophy animals (lion, leopard, elephant, rhino and buffalo). The program incorporates a companion curriculum with support resources including games, activities, posters, flash cards and assessment and lesson plan ideas for educators. <http://www.oldmutual.co.za/about-us/transformation/financial-education/financial-education-programmes/on-the-money.aspx>
4. *Makutano Junction*: a Kenya-based soap opera by Mediae Company, supported by the Financial Education Fund of the United Kingdom's Department for International Development. They also plan a related school curriculum. www.makutanojunction.org.uk
5. *Dab iyo Dahab* ("Fire and Gold"): a Somali soap opera sponsored by USAID and Education Development Center (EDC). This project, which combines traditional storytelling with interactive audio instruction, is audio-broadcast to young people through MP3-embedded devices. <http://idd.edc.org/about/news/fire-and-gold-helping-somali-youth-make-wise-financial-decisions>
6. Shujaaz Financial: a monthly comic book produced by Well-Told Story (WTS) with a related radio program. Junior Achievement Kenya (JAK) is currently partnering with WTS to develop related financial literacy materials for schools. <http://wts.co.ke/comics.php>

In the next section we assess the design and content elements of the first three of these initiatives, framing with the InfoEmotion Matrix.

Part II Analyzing the design of financial literacy programs

Since 2009, The Visualizing Finance Lab at Parsons The New School for Design has explored the use of metaphor-rich visual storytelling to improve financial understanding. These “Narrative Visualizations”—an appellation that encompasses cartoons, illustrations, graphic novels, comic strips, animations, videos, etc.—employ traditional storytelling elements such as character, setting and metaphor to convey complex concepts and behaviors. In 2012 the VFL piloted the InfoEmotion Matrix, a tool for assessing content and design elements in Narrative Visualizations (Fry et al. 2013:1242). The matrix can be used to identify relationships among an image’s content elements (on the vertical axis) and its design elements (on the horizontal axis). Each axis orders the elements from most-rational to most-intuitive aspects, echoing Kahneman’s (2003, 2011) systems of decision-making. The InfoEmotion Matrix is a tool to aid the co-design and evaluation of visually-based financial literacy materials, identifying the absence/presence, relative weighting and interplay of design and content elements. Table 1 presents a simplified list of elements.

Content Elements

Financial factors

- Data/information: numbers, budgets, facts
- Concepts: e.g., compound interest, legal information, policies, loan terms

Behavioral aspects

- Decision processes: rational versus intuitive methods; influences
- Culture: a community’s norms, expectations, beliefs and biases
- Ethics/consequences: the right/wrong thing to do; financial and personal outcomes
- Emotion: personal and subjective feelings around relationships, loyalties, opinions

Visualization Elements

- Graphs/maps
- Text: on-image written information or data
- Dialog: verbal explication by characters, voiceover or speech bubbles
- Metaphor: e.g., symbols, personifications, archetypes
- Setting: locations and objects
- Character: individuals or personifications with whom the viewer can identify or be influenced
- Body language: of character(s)
- Facial expression: of character(s)
- Tone of voice: of character(s) and/or voiceover

Table 1: Elements of the InfoEmotion Matrix (adapted from Fry et al. 2013:1242-1243)

Next, we apply the matrix elements to three African examples, highlighting the emotions, beliefs and cultural factors that drive financial decisions and behaviors.

Example 1: The Ant Bank “Teach Children to Save”

The Ant Bank is sponsored by the NGO Financial Literacy for All through their “Teach Children to Save” initiative, which has introduced the character of Zak: an ant-like cartoon superhero who encourages children to save (see Figure 1). The program distributes the “Ant Bank” to children as a modern replacement for the traditional “kolo”: an earthenware pot in which money is kept. The “ant” metaphor was substituted for a “piggy” bank for cultural reasons: because of religious proscriptions against pigs, and because of the ant’s positive cultural meanings. Ants are considered to be hard workers that save for the future, and they represent abundance; they are disciplined, strong for their size, good managers of resources, environmentally friendly and willing to sacrifice for the common good. An African folk saying asserts that “a nest of ants near your door means you will grow rich.” (Shoniran 2012:sp)

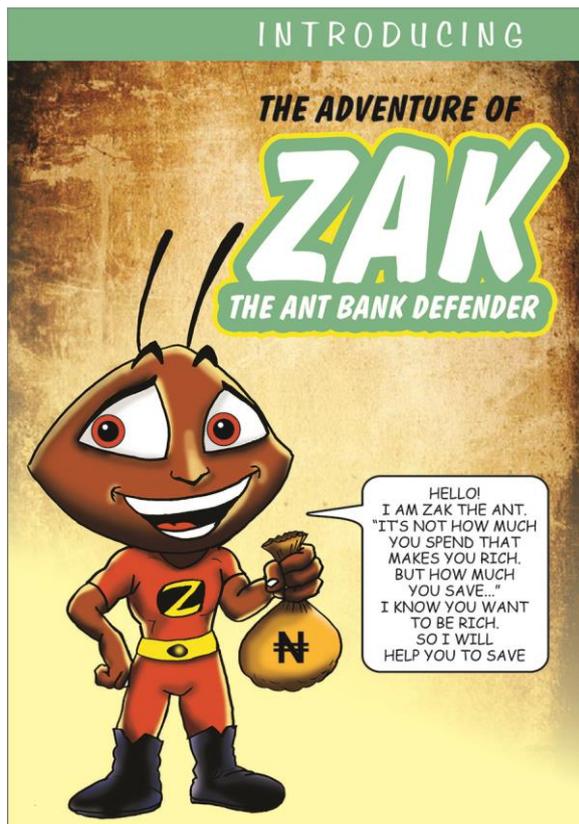


Figure 1: Zak The Ant Bank Defender (Shoniran 2012)

InfoEmotion Matrix content elements that dominate here are

- Financial: concepts (saving, wealth accumulation)
- Behavioral: culture (head echoes the shape of a traditional “kolo” bank; ant as cultural metaphor).

Dominant design elements are

- Character (ant superhero Zak)
- Metaphor (ant and full bag as symbols of abundance).

In addition, the content element of “Decision process” engages the design element of “Dialog” to show motivation, with Zak directly addressing the viewer. “Facial expression” reinforces the idea that saving is positive with Zak’s optimistic expression, while his “Body language” suggests determination and capability.

Example 2: Scandal soap opera

Scandal is a popular television soap opera in South Africa (see Figure 2). In 2011-12 a three-month storyline addressed indebtedness incurred by a religious and moral woman (Maletsatsi) who bought furniture to please her family and to impress her friends. As interest compounded her debt, she fraudulently “borrowed” from a community fund and eventually had to confess and construct a plan for repayment.



Figure 2: Financial woes cause consternation from *Scandal*
 ([http://www.etv.co.za/sites/etv.co.za/files/Maletsatsi telling Dintle that she's been fired retrieved 5 July 2014](http://www.etv.co.za/sites/etv.co.za/files/Maletsatsi_telling_Dintle_that_she's_been_fired_retrieved_5_July_2014))

Dominant content elements:

- Financial: concepts (debt and interest)
- Behavioral: ethics and consequences (actions divergent from moral self-image)
- Behavioral: emotions (love, pride, fear, shame)

Dominant design elements:

- Dialog (all financial concepts and decisions are explained by characters' lines)
- Character (Maletsatsi is established as a moral and loving person)
- Facial expression, Body language, Tone of voice (all reveal ethics and emotions)

The character's dialog in the video also clearly demonstrates that her "Decision processes" are not rational or analytical; rather, they're based on her emotions around pleasing her loved ones and seeking status. The setting in Maletsatsi's home reflects her pride, aspirations and love of family.

Example 3: "On the Money"

The "On the Money" financial education program was developed by Old Mutual PLC (South Africa), a financial services firm. The program primarily explains financial concepts through text, reinforcing the information with images of the "Big Five" game animals as metaphors for desirable financial behaviors (see Figure 3).



Figure 3: The Secret of the Lion from “On the Money” (retrieved 05 07, 2014 from <http://www.oldmutual.co.za/about-us/transformation/financial-education/financial-education-programmes/on-the-money.aspx>)

Lion: “eat first” allocating money to savings before spending

Leopard: set realistic goals

Elephant: knowledge is power: the importance of record-keeping

Rhino: charge ahead to pay down debt

Buffalo: patience yields compounded returns

In this program’s workbook materials, human cartoon characters discuss and apply the animal-based financial concepts in comic-strip format (see Figure 4).

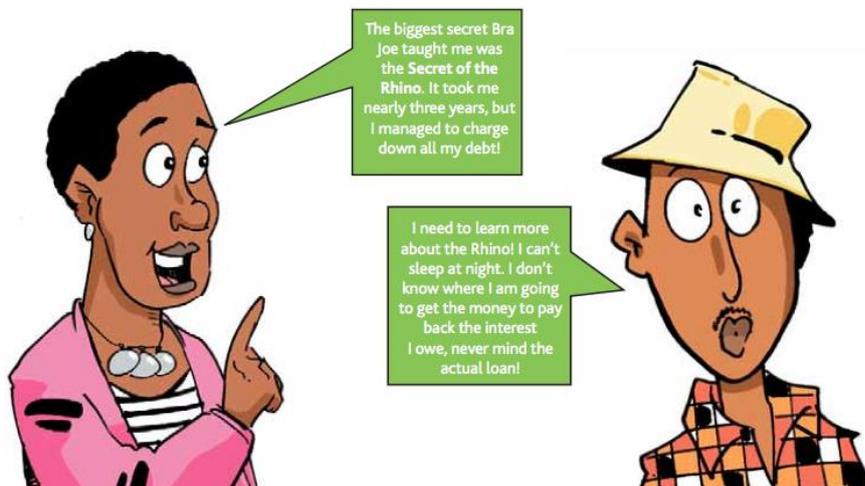


Figure 4: The Secret of the Rhino from “On the Money” (retrieved 07 07, 2014 from http://www.oldmutual.co.za/onthemoney/images/rhino_cartoon01.gif)

Dominant content elements:

- Financial: concepts (saving, planning, debt)
- Behavior: decision processes (rational, motivated by fear)

Dominant design elements:

- Text (speech bubbles; program is very text-heavy overall)
- Metaphor (extended metaphors of the animal behaviors)

The cultural aspects of this initiative are varied: the “Big Five” are trophy animals hunted by the wealthy, while the human cartoons depict individuals of the 90%. Both groups of characters are stylized, with neutral facial expression and body language. Speech bubbles present dialog, but tend to be informational and imply rational rather than emotional decision processes.

		Visualization element								
		Graphs/ Maps	Text	Dialog	Metaphor	Setting	Character	Facial expression	Body language	Tone of voice
Content element	Financial : data and information									
	Financial : concepts									
	Behavioral : decision processes									
	Behavioral : culture									
	Behavioral : ethics and consequences									
	Behavioral : emotion									

Table 2: InfoEmotion Matrix mapping relationships among content and design elements. The icons of ant, woman and lion represent The Ant Bank, *Scandal* and “On the Money” examples, respectively.

As the InfoEmotion Matrix (Table 2) shows, The Ant Bank (Zak) utilizes cultural references and metaphors to convince in what is largely an appeal to his audience to save and accumulate wealth. It is clear that *Scandal* is richest in its use of behavioral content elements, presenting these convincingly in situations dominated by ethical and emotional factors, while the “On the Money” program uses metaphor (and large quantities of text) to make a rational-choice case for saving, planning and paying off debt.

The indexing and cross-referencing of content and design elements in the matrix suggests that it could be a useful tool in co-designing financial literacy materials, as it enables financial educators (who understand financial concepts) to work closely with designers and with community members (who comprehend cultural, behavioral and emotional issues, as well as the community’s financial-literacy needs).

“... the person who will eventually be served through the design process is given the position of ‘expert of his/her experience’, and plays a large role in knowledge development, idea generation and concept development. In generating insights, the researcher supports the ‘expert of his/her experience’ by providing tools for ideation and expression. The designer and the researcher collaborate on the tools for ideation because design skills are very important in the development of the tools. The designer and researcher may, in fact, be the same person.” (Sanders and Stappers 2008:8)

Used in this way by experts in content, behavior and design, the matrix can provide a conceptual and practical framework within which stakeholders can collaborate in the development and evaluation of financial literacy materials.

Conclusion and next steps

The analysis here of three financial education examples highlights the ways in which design elements can be used to support insights from behavioral economics, when design choices embed financial content into the emotionally and culturally rich contexts that drive individuals' financial decision making. The effectiveness of these approaches is currently being evaluated through rigorous research studies that are measuring the effects of both the *Scandal* soap opera episodes and the "On The Money" programs. Results are still forthcoming from Financial Literacy & Education (an initiative of Russia Trust Fund, The World Bank and the Organisation for Economic Co-operation and Development (OECD)), but a recent post on their website indicates that *Scandal* has had dramatic effects on viewers' financial engagement (Financial Literacy & Education 2013: sp)

Programs that emphasize behavioral aspects are not necessarily dominant in financial literacy efforts; however, evidence about the importance of behavioral elements is emerging, and these behaviorally-oriented concepts and programs are increasingly embraced by major global organizations such as The World Bank, OECD and international aid organizations. The themes of these programs—budgeting, borrowing, saving—promote immediate and practical goals that are of paramount importance to the economic 90%, and the programs are sensitive to the cultural and belief structures of their audience. More-traditional concept-based education initiatives would do well to emulate many of these practices, especially as long-term saving and planning is impossible without these short-term capabilities.

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IMPLEMENTING THE KYOTO DESIGN DECLARATION'S COMMITMENT TO SOCIALLY RESPONSIBLE DESIGN EDUCATION: REFLECTING ON THE CHALLENGES FACING DESIGN EDUCATORS

Kathryn Pope

Greenside Design Center

Robin Turner

Greenside Design Center

Abstract

The Kyoto Design Declaration of 2008 expresses a commitment of Cumulus members to “sharing the global responsibility for sustainable, human-centred, creative societies”. In essence, the declaration embraces and promotes a new role for designers that sees human-centred design thinking being applied to improve our world. Particular emphasis is also paid to design education where the signatories accept their part in the responsibility of educating the youth to help realise the vision of a better world. The Kyoto Design Declaration is one instance of the more general movement towards socially responsible design which has been gaining momentum since the 1970s. Despite several decades of contributions and advancements towards socially responsible and sustainable design, of which there are many remarkable achievements worthy of celebration, this paper draws attention to challenges facing design educators in achieving the aspirations contained in the declaration. Based on a review of literature regarding social responsibility, the paper presents an outline of important considerations that design educators need to engage with in order to meaningfully further the socially responsible design agenda. These considerations are grouped under the broad headings of ‘conceptual clarification’, ‘complexity of context’, and ‘judging responsibility’. The first theme, ‘conceptual clarification’, raises questions about the sufficiency of terms and concepts evident in the literature. The theme of ‘complexity of context’ focuses attention onto the typical setting for social responsibility highlighting the intricate and multifaceted issues that characterise it. Lastly, the theme of ‘judging responsibility’ speaks to both the desperate need as well as the substantial limitations of evaluating design interventions in terms of social responsibility. Whilst the primary purpose of the paper is to foster critical reflection amongst design educators by emphasising the complexities of the field, the paper continues to offer some recommendations regarding the teaching of social responsibility with reference to the knowledge, skills and attitudes expected of future socially responsible designers.

Keywords: *Social responsibility, design education, curriculum planning, ethical design, Kyoto Design Declaration.*

Introduction

Viktor Papanek is often cited for instigating the social responsibility agenda, and in his book “Design for the Real World: Human Ecology and Social Change” published in 1971, he contends that designers by necessity carry a social and moral responsibility because they shape the environment

and conditions under which people exist. He argues that “design must become...responsive to the true needs of men” (p. ix). The vision espoused by Papanek has been adopted by several heavyweights in the design sector, and leading international professional design bodies, such as IFI (The International Federation of Interior Design) and ICOGRADA (International Council of Graphic Design Association) have declared their commitment to socially responsible design. IFI, for example, “believes it has a mandate to use Interior Architecture/Design as a tool to improve the quality of life and uphold human dignity for all” (IFI, 2014), and ICOGRADA’s mission includes using “design as a medium for progressive change” (2014). In 2008, members of Cumulus (International Association of Universities and Colleges of Design, Art and Media) signed the Kyoto Design Declaration thereby committing themselves to a human-centred, responsible and sustainable design agenda. Similarly, other multinational organisations such as DESIS (Network of Social Innovation for Sustainability) continue to promote the role of designers in improving the life of all. With such apparent unanimity, one may conclude that the field of socially responsible design is well defined and established. This paper argues that it is not, and draws attention to the unanswered questions and discrepancies evident in the literature around socially responsible design. The primary purpose is to sensitise design educators to the factors at play so that their engagement with the socially responsible design is informed and critical. In so doing, it is hoped that the vision evident in the Kyoto Design Declaration will be supported by rigorous intellectual engagement with the concept of socially responsible design. The paper divides the issues addressed under the headings of ‘conceptual clarification’, ‘complexity of context’, and ‘judging responsibility’.

Conceptual clarification

Several authors acknowledge that the field of social responsibility has not yet been fully established, for example Blyth and Kimbell (2011). Chick (2012) describes the field of social innovation as new, evolving, and lacking clarity regarding strategies and procedures. Morelli (2011) likewise argues that the question of sustainability, in which she includes social sustainability, “is still far from proposing consolidated patterns, behaviours, and strategies” (p. 91). It becomes immediately apparent, and Chick (2012) acknowledges it explicitly, that the different terminologies employed add to the confusion. Terms such as social responsibility, social sustainability, social innovation, human-centred design, value-sensitive design, and ethical design appear in the literature, and yet there is little to clarify the extent to which the understandings and intentions of the authors are convergent. Chick (2012) does offer a definition of social innovation, which points to the use of design specifically to address social problems. In this sense, design is seen as a tool that is used deliberately to target and alleviate social problems. An alternative interpretation of social responsibility, however, is evident in the writings of Kiran (2012) and Roeser (2010). These authors frame social responsibility as the acknowledgement that design is not value-neutral and so has social consequences, often unintended, and responsible designers are those that take care to anticipate and manage such consequences. While Cooper (2005) may argue that drawing such a distinction between the two interpretations is puritanical, the differences in meaning pertain to important issues such as the purpose and role of the designer and the consequent competencies required of the designer. Under Chick’s (2012) interpretation, the role of the designer is more an instigator or leader of change, which in turn requires more of the designer in terms of knowledge, skills and attitude. A distinction and clarification of each interpretation, particularly for design educators, is thus justified and necessary.

Another case of conceptual confusion regards the domain of ‘social’ in the design context and few articles offer in-depth definitions. Several authors attempt to explain the concept by linking it quite

generally to ethical consideration (for example Madsen (2005) and Cooper (2005)). Others attempt to clarify the concept by offering examples of social problems. Kusz (2005) makes reference to child labour, equity and human rights; and Morelli (2007) talks of unemployment, relocation and disempowerment as consequences of globalisation. The Brundtland Report published by the World Commission on Environment and Development¹ (1987), references many different issues (which are not categorised explicitly into 'environmental' or 'social' domains) and includes human rights, education, family planning, and poverty to name a few. Colantonio (2007) examines in detail various works on what he calls 'social sustainability' and arrives at a list of 38 themes. Whilst Colantonio (2007) attempts an integrated definition of social sustainability in the paper, he states explicitly that "the concept of social sustainability has been under-theorised and often oversimplified" (p.15).

It could be argued that the term 'social responsibility' (or 'social sustainability') is a sufficiently abstract and encompassing concept that it need not, and indeed cannot, be simply defined. However, without such conceptual clarification and demarcation, it offers little explanatory power and even less guidance to educators in formulating curricular to tackle 'socially responsible design'. What the essential nature of a 'social problem' is; what it is that designers should recognise as sites for intervention; and accordingly what competencies are required of designers, are questions that remain unanswered. These questions may seem 'academic' in nature, and may seem to bear little consequence, but as one considers the practical issues of socially responsible design in the following section of the paper, it becomes increasingly apparent that a lack of a clear conceptual foundation for the field poses extensive ethical and practical challenges to designers.

Complexity of context

The first immediate challenge is clarifying what issues or social problems fall legitimately and appropriately under the jurisdiction of a designer and accordingly are deserving of design interventions. There are two important aspects to this question. Firstly, when is any intervention desirable and justifiable; and secondly, when is it desirable and justified for a designer/design team to be the instigator /enabler of such an intervention? To begin with the first question, whenever one intervenes in a situation, it is on the basis that the situation is deemed worse than it could be, which supposes a value system of what is better and worse, and there is a real risk that the value systems between those intervening and the 'recipients' of the intervention are different (Melles, De Vere, & Mistic 2011). In a world that largely embraces democracy and values diversity, one must acknowledge that the 'right thing to do' is frequently contestable. There are also typically competing interests amongst different individuals and groups even within the same situation, and anyone attempting to intervene must determine whose ends are being met in the intervention, whose are not, and decide whether the situation is defensible (Tatum 2004). These are complex ethical issues which are deserving of deep considered engagement. In the social and medical sciences, ethics committees exist to examine the ethical permissibility of interventions and research, and the design community would do well to embrace the same level of respect and reverence before engaging in social interventions (see for example the code of Ethics from the American Psychological Association [2002]).

Frequently in the literature on socially responsible design one sees a call for the design process to be collaborative and participatory, based on the premise that involving the beneficiaries allows them to determine for themselves what they want, thereby reducing the risk of imperialism (Dorrestijn & Verbeek 2013). Whilst participation and collaboration are important and can protect the interests of

communities, it should not be seen as a simple solution to the problem. One must be able to identify the different groups and interests, identify a fair representative to speak on behalf of others, ensure that each voice is heard, determine when consensus is reached, and determine what to do when consensus is not reached (Boenink, Swierstra, & Stermerding 2010; Tatum 2004). One must also consider that a communities' wants and desires may not reflect their best interests, or that individual member's wishes conflict with the collective good (Tromp, Hekkert, & Verbeek 2011). On a practical level, the skills required in negotiating with people are ones that require training and practice. IDEO² (2014) has released a guide to assist designers with such skills, and whilst the efforts and the final product are commendable on many levels, they simply do not do justice to the state of knowledge in the social sciences around working ethically or conducting credible research with human participants. For instance, the few pages devoted to conducting a group interview as a qualitative research methodology are not sufficient to explain the value and threats of various sampling strategies, nor the skills of managing expectations and understandings of a heterogeneous group of people.

The issue that comes to the fore, and which bears relevance to the second question of when it is desirable for a design team to enable an intervention, is recognition of the limitations of designers working in the social arena. Papanek (1971) argues that the work of designers necessarily falls in the social domain, however, seeing the role of designers as instigating and enabling social change and reform puts additional responsibilities onto a designer, over and beyond traditional design competencies. Some authors have argued that designers should assume these additional responsibilities, see for example Melles, de Vere and Mistic (2011) and Roeser (2010), whilst others advocate for multidisciplinary teams to share the responsibilities.

Use of multidisciplinary teams seems a sensible recommendation, and also has the potential to address the fact that dealing with social problems tends to require knowledge across various disciplines, from the social sciences to physical sciences to economics. Especially when coupled with environmental sustainability concerns (for example material selection, manufacturing and transportation costs) as well as sociological and economic factors (for example economic cost, image of modernity etc), the knowledge required to design an effective intervention that is appropriated by the intended target is massive. It is not only unrealistic, but also unfair to expect that a design team alone take on board all of these various considerations. Although a more fair alternative, reliance on multidisciplinary teams also requires additional skills of designers, namely to be able to function as part of complex, potentially fragmented teams constituted by experts with potentially different priorities, epistemologies and approaches. Again, however, the field of socially responsible design is not yet sufficiently established to provide guidance on the necessary constituents of such a multidisciplinary team, how constituents should organise themselves and what the rules of engagement are. Nor is the field sufficiently established to answer authoritatively what constitutes a good or bad socially responsible design, as discussed next.

Judging responsibility

There is mounting support for the need to have credible evidence-based ways to determine the success of socially responsible designs (Cooper 2005). Progress in socially responsible design and sustainable design cannot be determined without evaluating the outcome and impact of design interventions and the credibility of such evaluations depends on the validity and reliability of the assessment methodologies (The World Bank 2004). There are many measures or indicators that have been put in place to measure sustainability from an environmental and even economic perspective,

but fewer to measure the social aspects. Melles, De Vere and Misic (2011) list some criteria to judge social responsibility which includes suitability, affordability, advancement, empowerment etc; the Bellagio principles make reference to things such as effective communication and broad participation (cited in Ndeke, 2011); and Wicklein (1998) identifies seven criteria such as affordability and the image of modernity. There is not much repetition in the variables identified by the various authors indicating that there is not a standardised list of factors to consider. Even if one were to arrive at an exhaustive list, which Colantonia (2007) suggests is not possible because each circumstance has its own unique considerations, merely identifying them is insufficient. Identifying a variable of interest does not equate to having a valid and reliable measure for it. The development of sound scientific instruments is a detailed discipline that requires considerable theoretical foundation and even more testing and verification to be confident of its applicability and utility (Coolican 2004; Rosenthal & Rosnow 1991). To add to the difficulty of the task, social consequences tend to fall into what Boenink, Swierstra and Stermerding (2010) categorise as 'soft' impacts. Such variables, taking 'quality of life' as an example, are often qualitative variables that are not easily observable or quantifiable, are relative to situations and difficult to judge objectively, are dependent on multiple and interactive causes and difficult to attribute to a single intervention. They also tend to be the long term result of an intervention which, as Kiran (2012) and Tromp, Hekkert and Verbeek (2011) successfully argue, is almost impossible to anticipate and predict at the time of intervention.

Despite such challenges and flaws in making judgements, educators of future socially responsible designers must be able to frame in some way the relative success and/or failure of a design intervention. The growing field of socially responsible design would profit from guidance on the various dimensions, expertise and methodologies needed to add rigour, validity and reliability to the assessment of socially responsible design.

Conclusion and recommendations

The paper thus far has attempted to highlight the challenges facing educators as custodians of future socially responsible designers. In conclusion, it now shifts to making pragmatic recommendations. Our primary recommendation is for educators to foster in students a reflective and critical approach towards social responsibility that will serve them now whilst the field of socially responsible design is still emerging, and in future scenarios that educators cannot anticipate. To achieve this, we recommend the following, organised in terms of knowledge, skills and attitude:

- In terms of knowledge to be acquired, we recommend that a reflective and critical account of social responsibility be included in the curriculum. Until such time as the field has clear conceptual frameworks, each institution may need to articulate its own model of social responsibility, but should also make students aware of alternative interpretations. Models of social responsibility should highlight the unique contributions designers can bring to social change, as well as their limitations and the need for other professional expertise. An appreciation of the ethics of intervention is fundamental, paying due credence to the risk of imperialism without abandoning the cause of social responsibility.
- In terms of skill, we encourage an experiential learning approach that exposes students to genuine circumstances in which socially responsible design typically occurs. This includes being exposed to heterogeneous groups with competing values and interests; limited budget and resources; ill-defined and complex problems for which neither designers nor the community can readily propose solutions; the challenges of working in underdeveloped situations where language, transport, cultural differences, availability etc have the potential to undermine planned activities. However,

educators and education institutions will need to accept responsibility for managing such exposure to prevent any harm coming to either the community or the students.

- In terms of attitude, we hypothesise that students will more readily embrace their role as facilitators of change in a reflective and critical way if they are able to experience both the reward of being part of positive change as well as the realisation that design solutions can never be perfect and complete from every point of view. A potential strategy to help students appreciate the complexity of evaluating design interventions is to involve students in generating assessment criteria and methodologies in collaboration with various stakeholders.

In a progress report of sustainable development subsequent to the Brundtland Report, Sneddon, Howarth and Norgaard (2006) note that the necessary changes for a sustainable future depend on, amongst other things, “vast campaigns of education”. Whilst this no doubt encompasses the consciousness of the general public, design educators must accept the daunting but privileged task they have in reorienting the values and skills of the next generation of designers.

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Endnotes

¹ Commonly known as 'The Brundtland Report', this is a report produced for the United Nations by the World Commission on Environment and Development intended to better understandings about long-term environmental issues with a view to formulating internationally cooperative strategies to deal with them

² IDEO defines itself as a global, human-centred design consultancy

OFF-CENTRE – A CALL FOR HUMBLE LESSONS FOR DESIGN HOW CAN METADESIGN PERSPECTIVES SUPPORT EDUCATION IN DESIGN FOR SUSTAINABILITY?

Mathilda Tham

University of London

Abstract

This paper uses the notion of 'off-centredness' to highlight and critique a North Western conceit, hegemony and anthropocentric worldview, and an interwoven dominant construction of sustainability as 'other'. It argues that while this generally is detrimental to social and natural systems, it also has repercussions on the specific context of education for design for sustainability. The paper proposes that pedagogy in this remit can be enriched by the positioning of ourselves - as educators and students - as humble co-learners. It offers a tentative pedagogical framework - 'from me to we' and from 'product to paradigm'. This has the purpose of supporting co-learners to, from a deep understanding of, and connection with self and place, and engagement with design as physical object, form understandings of and meaningful relationships with the world as a whole. This should help enable co-learners to find agency as civilians and designers to contribute to futures of sustainability. The research has twinned applications. It informs the curricula of two new degree programmes in design at Linnaeus University, Sweden. It will result in a web-based learning resource open for general use.

Keywords: *metadesign, shared learning, co-learners, paradigm shift, extended epistemologies, eco-literacy, futures of sustainability*

Introduction

This paper presents insights from the early stages of a research project, which ultimately seeks to mobilise an ontological (how we understand the world), teleological (how we define purpose) and epistemological (how we understand knowledge) leap, resulting in new approaches to pedagogy in design education. The purpose of these approaches is to support students and educators as co-learners to, from a deep understanding of, and connection with self and place, form understandings of meaningful relationships with the world as a whole, in order to find agency as designers to contribute to futures of sustainability.

The research supports the preparation of the launch of two new degree programmes focusing on design for positive change at the School of Design, Linnaeus University, Sweden, in 2015. The full study will result in a web-based learning resource open for general use.

A self-reflexive note on humility is called for, as I am not oblivious to the irony of simultaneously proposing humble lessons, and a framework that purports to integrate everyone and everything. Suffice it to say that I position myself as one of the co-learners embarking on a shared learning journey? It is also important to make explicit where the thoughts of the paper come from, as I am

deeply immersed in a context I seek to critique and change. I am a Swedish UK resident, over the years working in Estonia, the US, France, Norway, Indonesia, China and Turkey. I am a white, middle-aged woman – with the many privileges, and some challenges, that this entails. I am a fashion designer, turned educator and activist. A lengthy PhD project gave me the chance to reattune my existing interests and skills, as well as harness the new insights and capabilities I collected underway, towards a practice that I call the design of shared learning experiences. (Tham 2008)

The paper draws on insights from my fourteen years of experience of teaching design for sustainability at graduate and post graduate levels, and a range of helpful conversations during these years with other educators, students, researcher peers, and a general public. The paper further incorporates early findings from a series of interviews that are being conducted with educators and students from Denmark, England, Holland, Indonesia, New Zealand, South Africa and the USA on the use of vernacular practices and local knowledge in learning for sustainability.

This paper seeks to offer an impression of an idea for a systemic and holistic approach to design education in the context of sustainability, and to offer insights from the early stages of a research project. This means that issues of concern, educational approaches, and conclusions have been sketched out rather than drawn in detail.

What is ‘off-centre’?

‘Off-centre’ in the title of this paper refers to a series of provocations to a Western hegemony, and a dominant anthropocentric (and ego-centric) worldview, brought by the sustainability imperative. (Its urgency evidenced by e.g. Rockström *et al.* 2009; IPCC 2013.)

- The North West is ‘off-centre’ in light of emerging (or at last recognised) centres for economic growth, academic excellence and creativity.
- It is ‘off-centre’ in terms of the lived experience of unsustainability – or a failure in relating local/personal concerns to global challenges.
- ‘Off-centre’ evokes an urgent shift from prioritising the wellbeing of humans living in the North West today, to that of humans living in other places and in the future, and other species. (See e.g. Hawken *et al.* 1999; Sardar 1999)
- ‘Off-centre’ refers to the poor fit of the dominant academic institution in terms of organisation, epistemology, pedagogy and its very purpose, to embrace sustainability.
- Finally, and positively, ‘off-centre’ refers to what in systems theory is termed ‘bounded instability’, an auspicious space for learning and innovation potentially enabled when systems veer off-balance (see e.g. Stacey 1992).

Through my experience (in Sweden and the UK) of implementing sustainability across academic curricula, teaching design for sustainability at graduate/post graduate levels and to professionals, and acting external examiner to an MA in design with the specific focus of sustainability, the theme ‘off-centre’ has manifested itself in many ways. Educators express a lack of confidence in teaching about and for conditions they lack lived experience of. Students (and educators) express feeling overwhelmed by the magnitude and complexity of unsustainability, struggling to see their own role and to find agency. Overarching guiding principles of academic institutions and programme/course specific quality/assessment criteria fail to acknowledge and promote core tenets of a paradigm of

sustainability, such as an extended epistemology (Heron and Reason 2001), diversity, collaboration, and empathy (see e.g. Macy and Johnstone 2012).

I attribute the off-centredness (in both its general and education specific manifestations) to a Western trajectory of increasing separation from both direct engagement with and appreciation of natural systems. (See e.g. Merchant 1982) The intricately twinned (enabling and spurring the process) trajectory being, of course, that of economic growth taking the place as a core societal logic and dominant narrative (see e.g. Offer 2006), resulting in individual and societal (incorporating both personal and professional vantage points) obsession with novelty and fast speed, external routes to happiness and success, and homogenisation. This has come at the cost of natural and social well-being, and diverse modes and definitions of thriving (see e.g. Thorpe 2007).

In total, this constructs sustainability as *other* to the dominant ways of thinking and doing, and sustainability as *external* to dominant understandings of self. Thus sustainability in action becomes at best an attempt at retrofitting, and in thought a gesture of altruism. (See also *Tham forthcoming*) As North Western educators and students, we are locked into this logic and its many practical manifestations due to a paradigmatic blindness that is perhaps both a real result of our immersion and seemingly convenient.

What can a deep encounter with sustainability entail for students and educators?

In the context of education for design for sustainability, venturing outside of this fish-tank proposes some significant challenges, including:

- The excited student accepted on the degree programme, eager to *make new stuff now*. Will she or he be happy to be told to become what amounts to a “cathedral thinker” (Brand 1999) - engaging anonymously in collaborative pursuits, the tangible results and returns of which will not be realised within her or his lifetime?
- The seasoned educator. Will he or she be happy to confront that a lifetime of personal and professional practices (and a more general subscription to and being part of maintaining oppressive societal structures) may have contributed to unsustainability? Will she or he be happy to leave the comfort zone of well-established teaching practices? Will she or he be happy to confront and admit a lack of knowledge, (and furthermore that the students may know more), and dive into the unknown?

I have personal experience of these situations, as applied to me and as observed, and the general answer is a resounding NO. This NO is understandable as it the response to the proposition of what amounts to letting go of the fundamental scaffolding that is the understanding of our identity, our purpose, our world. Using a Swedish saying, ‘this is not done in a coffee break’.

Yet, students are agile and resilient. Again, as I have experienced, equipped with the right tools, their acceptance of new parameters is fast, and they can reattune expectations, curiosity and creativity towards contributions for futures of sustainability. For educators, there is of course more to digest, unlearn, and generally more at stake - a greater risk involved. The safe and empathic shared learning space is therefore central to their eventual reattunement. Yet, at the heart of both students’ and educators’ crossing of the profound threshold from being part of design as usual (or almost as usual) to design for sustainability, which also constitutes a paradigm shift for each individual, is the

experience of *agency*. My research shows that even a small increase in the experience of agency, which may concern seemingly mundane and negligible improvement – such as washing your clothes at lower temperatures *today*, or choosing local produce, again, *today*, opens up more significant doors to sustainability. Being able to take this first, even minute step, a) increases an individual's experience of the importance of sustainability and how interesting it is; b) increases his or her curiosity to learn more; c) enables her or him a better engagement with the complex interdependencies that constitute sustainability, and her or his negative and potentially positive role in these; and c) increases her or his experience of agency to make more contributions to sustainability, from personal and professional vantage points (Tham 2008).

How can pedagogy in design education provide humble lessons for design?

This paper argues that, in conjunction, the provocations of off-centredness call for new *humble* lessons for design. It proposes that adopting the position of off-centre humble co-learners offers important opportunities for educators and students in the North West to contribute to global sustainability, and promote a healthy and polycentric design paradigm. It suggests that as a close and synergistic companion to formally stated external goals and principles of sustainability, educators and students should be supported in unlocking an internal compass, where a deep, embodied sense of *rightness and appropriateness* provides guidance for all decision making, whether tacit or formal.

Helpful companions to this pursuit are two perspectives on what constitutes valid learning in what amounts to a context of sustainability. The notion of an *extended epistemology* sums up the insights that only when (otherwise prioritised) theoretical knowing forms a congruent whole with knowing gained through experience, practice and presentation, can knowledge be robust. (Heron and Reason 2001) The poignancy of such knowing for sustainability is emphasised in the realm of ecological literacy which advocates that formal understandings of principles of natural systems should be accompanied by or stem from tactile and experiential encounters with nature. (Goleman *et al.* 2012) St Pierre (2014) points out an unrealised potential, as educational initiatives for eco-literacy have hitherto primarily or even exclusively been directed at children. Another helpful companion is the notion of metadesign, which can be described as design of design itself, of seeds for change, and emergent, collaborative design. (See e.g. Giaccardi 2005; Wood 2007) For the purposes of this paper, two contributions of a substantive metadesign research project **1** are of particular relevance. They concern how metadesign perspectives and practices can support understandings, with resulting wide and agile agency:

1. of how a reflexive individual, centred in her or his values, interests and capabilities, can become part of meaningful, reflexive, co-creative and synergistic teams within and across disciplines, and a profound experience of ultimately participating in collaborations of shared purpose that span the world.
2. of how design at the level of a product, with its embodied materiality, form and detail, is nested within and intricately interdependent with higher orders of design, that constitute systems and paradigms.

(See e.g. Tham and Jones 2008; Wood, Nieuwenhuijze, Jones, *et al.* 2008; Jones and Lundebye 2012)

A tentative framework – ‘from me to we’ and from ‘product to paradigm’

The insights presented above have resulted in a tentative comprehensive framework for learning for design for sustainability: ‘from me to we’ and from ‘product to paradigm’. This seeks to support an

agile learning dance between personal values, experiences, vernacular practices, and global conditions and metanarratives, and between design of 'the thing' to design of systems, processes of change and paradigms.

The framework informs the new degree programmes at the Department of Design, Linnaeus University, where it has been translated into two interdependent progression paths (or green threads), 'from me to we to world' and 'from product to system to paradigm' spanning three years. At each step of increasing complexity, students will be exploring, mapping and giving design form to tacit and explicit interests and motivations, values, practices, histories and dependencies.

Obviously the larger 'maps' are not withheld through the process, but instead the progression steps indicate a chronological sequence of focus in learning. The educator travels these green threads together with the students. In fact, essential to the pedagogical framework is that educators and students establish themselves as co-learners with our students in a mutual and transparent contract. As educators we offer the safe space (in the guise of a learning place and time, transparent curricula and assessment criteria, learning frameworks, facilitation, rules of engagements – agreed upon with the students, confidence in the shared learning process). Students offer their attendance, participation, curiosity and willingness to share their knowledge and experiences.

Equally obviously, the framework proposed is partial. It will not be degree programmes without the vast expertise and experience that exists in the Department of Design. It will also take on different identities with each student and educator constellation that makes the shared learning journey. As a whole, the framework should be helpful for students and educators to form coherent and embodied narratives and to find their own voice and agency - as local and world citizens and designers, as individuals and as peers - and to be courageous and resilient when flying in the dark.

Conclusion

The term 'off-centre' is a provocation, designed to challenge both privilege and accepted dominant worldviews, where the construction of sustainability as *other* is deemed especially problematic. The result of the pedagogical approaches tentatively offered here, should be a polycentric worldview, where each student and educator, is centred though a deep experience and understanding of their particular *here and now*. This should enable a deep sense of connectedness with other realms of the world, and confidence, curiosity and creativity to stretch into new design remits and dimensions of our world, finding agency to contribute to futures of sustainability.

My research continues, eliciting more insights through case studies, interviews with students and educators around the world. Ahead of the launch of the new programmes at Linnaeus University, in the academic year of 2014/2015, the members of the teaching team will, in the form of a competence development programme, travel the green progression threads together, learning, exploring, contributing expertise and experience, shaping the programmes in their details. A range of approaches will also be piloted with existing students.

I recommend that further research in this remit:

- Explores what it means to be an educator and academic institution today, particularly in the context of sustainability.

- Explores how accessible educational resources can be created that draw on and synergise diverse ways of knowing for sustainability.

I gratefully welcome examples and stories of pedagogical approaches that take as point of departure a deep engagement with local place, and the insights this has yielded.

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www.metadesigners.org

DEMOCRATISATION BY DESIGN: NEW POSSIBILITIES OF DESIGN EDUCATION BY SHARING DESIGN KNOWLEDGE TO THE COMMUNITY

Albert Siu-Yin Tsang

Hong Kong Design Institute (HKDI)

Yanki Lee PhD

Hong Kong Design Institute (HKDI)

Abstract

Could there be a designerly way of enquiry for social situations? And what is the specificity of designerly ways of enquiry in design education? What will be the impact of sharing design language in an interdisciplinary pedagogy? The “Home” Possible Study aims to extend Cross’ (1982) classical approach of “designerly ways of knowing” which forms the discourse of how design becomes a discipline of enquiry. It is not a periodical research project. Instead, we make it one of our core research subjects and conduct different action research projects since 2012. In this paper, we discuss its latest development: from design education to civic education to create tools and platforms for an archive of Hong Kong lived-in homes. We also explore the possibility of sharing design knowledge as a democratising process through a series of design exercises with community. Our goal of putting this model into our local neighbourhood is to form a community for enquiry for future social design research. This process advocates the use of open enquiry, common tool creation and co-learning activity to carry out the research.

Keywords: Design Education, Design Pedagogy, Community of Practice, Democratisation.

Introduction

Draw Your Home!” is a follow up of the teaching and learning experience of the project “Patterns of Living” (French & Lee, 2013), which aimed to study the living conditions at public housing estates in Hong Kong. The whole process involved 40 design students at High Diploma level. They were asked to practice their architectural drawing technique and create spatial representations (floor plans and photos, Figure 1) to engage the residents (including themselves) to record the usages and designs of their homes in public housing estates. All the apartments they recorded are designed and constructed in a similar way of being standardised and serialised; and the spaces produced are thus repeated and refined. The results are 100 floor plans that recorded the actual usage of the living units, which reflects how social housing residents in Hong Kong use everyday design thinking to interact with the constraints of these standardised spaces and make them liveable.

The original attempt of “Patterns of Living” was to explore the possibility of making this experience a foundation for future models of pedagogy. To us, the learning processes would not only happen exclusively within the design school campus, but would also be open to the community and the public. For that reason, we are launching the second project, as part of the Home Possible Study, entitled,

“Draw Your Home!” (Figure 2). It focuses on young citizens, and how this methodology could impact the teaching and learning at junior high school level.

The emphasis of the discussion is on enabling the potential or competence of the designerly enquiry and on the likelihood of the possibility of sharing the so-called professional design language. The co-learning experience is also one of the focuses of the project. By co-learning and co-creation, we mean that both parties would have input into the generation of knowledge. By sharing the design tools, both the designers (design students) and pupils from high school in this project could benefit from the research process. The designers will be better informed about how their designs are actually “used”; through enabling the public to engage with the design language. The high school pupils would be better able to understand their homes in comparison with others in a similar situation.

The nature of the project involving the sharing of design languages also probes a discussion with the common methods adopted by the design research community. As Lee and Ho (2012) suggested, the nature of both social science and design is quite similar in that they are pragmatic and practical. What is more important, however, is the differences between them, which make the interchange and cross-disciplinary research meaningful. This paper wants to further enquire about what exactly could designerly way of thinking and research provide for investigating social condition. And what is the specificity of designerly ways of enquiry in design education.



Figure 2. Home Project poster

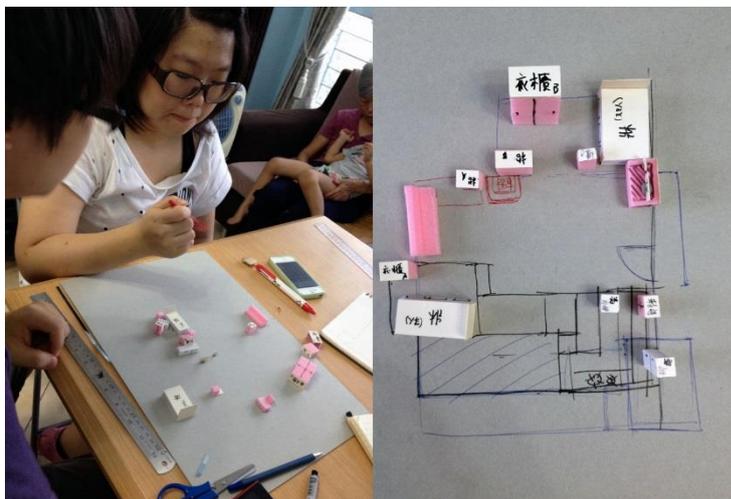


Figure 3. Research tool developed by students to engage

The “Patterns of Living” project shows that, while putting the design language as a social enquiry tool, design students gain a new understanding and build a relationship with the language. The roles of the design students in the study were multiple. First of all they were learning through applying their architectural drawing technique; and instead of the usual practice of using drawings to depict spatial design, they also had to put this set of skill in a new context for comprehension. The students also had to view the drawing technique as

an engaging and enquiry tool. To a certain extent, they were also educators; virtually transferring the basic design language of design to the informants/residents, so that the residents could be aware and review their usage through the graphic representations.

This time around at “Draw Your Home!”, we want to explore this methodology of sharing from another perspective. The focus this time is on the young citizens, and how this methodology could interact with the teaching and learning at junior secondary level. The subject for enquiry would be different in this project too, whereas for “Patterns of Living”, the subject is focused on the public housing estates, effectively setting the subject as class-based. This time we narrowed the area of study by place, and chose to recruit the participants within the neighbourhood of our school campus: Tseng Kwan O. This first of all could provide a sense of community for the young citizens, while allowing the enquiry to be cross-class, too.

Regardless of “Patterns of Living” and this round, we never view technical drawings as anything purely technical and objective. We propose that by drawing, one does not just objectively depict the reality, but instead, it is an alternative way of knowing. So this design tool, seen as an enquiry tool, would be beneficial not only to subjects like Design and Technology, but also to others like Liberal Studies. By drawing the home, a lived space that they are so familiar with, and viewing it from a very different perspective; we want to invite the students to discover a new way of understanding their living space, and the interpersonal relationship played out physically inside their very own home. The resulting floor plans will be presented back to the students. This is especially important as the focus is not only on one's own home, but a common ground of the community, of similar and different living conditions.

Next Step: Community Workshops

“Draw Your Home!” would be a series of community workshops, with two rounds. This first round is what we called the “teachers’ workshop”, followed by a round of “students’ workshop”. The “teachers’ workshop” is an attempt at co-planning. In the summer before the “students’ workshops” intended start date, we will invite teachers of various disciplines from the potentially participating schools to the Design Institute. At the workshops, the invited teachers will have the chance to experience the workshop that the students are going to participate in. They will get to know more about the rationale of the whole project, and they will also be invited to give advice for the workshops' structure and setting.

This round will also be an open-ended workshop for the teachers to explore the possibilities together with the research group. The teachers as active participants will have the opportunity to see how the workshop or the proposed methodology could interact with the existing curriculum. The feedback from this round of the workshop would provide ground for possible changes of the second round.

The second round is the “students’ workshop”. Students of F.1 – F.3 (age ranging from 12-15) studying in Tseng Kwan O will participate to draw the floor plans of their homes (with the expectation that not 100% of the participants will reside locally). The research group will meet with the students for two times in this round. We have produced a 1:1 floor plans of a typical compact public housing unit (36.8m², which will be used in the “teachers’ workshop” too). This plan would be a tool for the students to better understand the logic of translating three-dimensional space into a flat plan. As most of the students would be from Tseung Kwan O, where middle class housing estates are dominant, the plan would also be a tool for the students to experience and imagine the lives of those different from them. The planning is for the research team to visit the schools with the 1:1 plan and hold the workshops at each school, yet this option remains open as some of the schools may have limitations of space.

The resulting plans from the students will then be analysed by the research group and presented back to the students. The analysis would be focused on the uses of space and the negotiation of relationship through physical spaces and materials. The idea is aligning with the emphasis of the project, that although it is important for the students to acquire new tool for understanding their own homes, it is also very important for them to get to know the living conditions of other members of the community.

A Co-learning Process: A Question of Language

“For architects and clients, the floor plan is a special design aspect in which practice, conventions and prevailing social conceptions compete with the striving for modernisation and innovation, for adaption to new socio-cultural conditions and individual architectural and social-cultural aspirations” (De Vreeze, 2000). We also referred to Ehn’s (1998:122) way of how to use the meeting of language-games as a productive way of enabling participatory design:

1. Users have to understand the language game of design;
2. Users must be able to give complete explicit descriptions of their demands;
3. Designers have to understand the language games of the use activity.

This is why we focus on floor plan drawing exercise. For the first part of our study, we worked with interior design courses at our school and aimed to get our design students to understand the language games of the use activity of our home environment. We believe that floor plan, the specific design language of architects and planners, could be used to probe a dialogue with the common practice of participatory engagement. As Binder (in Halse et al. 2010: pp 18-21) argued, enabling participants to engage with new possibilities in a shared language that is not “owned” by any one professional group, is important. The use of everyday language moves away from abstract concepts, and instead highlights stories of things and people that can make sense across professional boundaries. In our project, we tackle this meeting of language-games the other way round, asking the question: what if we tried sharing the design language that is once ‘owned’ by professionals? And at the end will it become an everyday language that no one really owns? Will it be an alternative way of democratising design?

Towards A New Pedagogy of Designerly Enquiry

This study considers the various possibilities that we can generate through designerly ways of enquiry and ultimately how we can create a blueprint for future action research projects. The project is thus our suggestion for future models of pedagogy. The learning processes mentioned would not only happen exclusively within the campus, but would also be open to the community and the public.

“You know, it is always life that is right and the architect who is wrong”. Le Corbusier’s reflection indicated the importance of learning from people’s ingenuity and how they created lived-in architecture. In this respect, this data collection process advocated the use of open enquiry, common tool creation and co-learning activity to conduct “a spiral of steps, each of which is composed of a circle of planning, action and fact-finding about the result of the action” (Lewin, 1946:38). The designerly enquiry heavily involves design languages, which invited the users/residents to articulate and review their living space through practical terms. The residents ceased to remain mere informants and have the opportunity to engage in active exchange with the designers with the set of languages that restrain and enable their everyday lives.

There have been an ongoing discussion on the importance of design education and the argument may be divided between professional design education and the human capacity model (Stables 2013: p 1112). 'Design literacy' for critical consumers in the consumer society is a strong argument for providing design education as part of general education (Manzini 2004). But much of the discussion still involves advocating for design education as a separate discipline.

By sharing design language, "Draw your Home!" project aims to raise the design literacy of young students as part of a design democratising process. But what the project sets out to explore may not be design as a subject within the current pedagogic model, but rather be echoing Buchanan's suggestion of a more interdisciplinary approach (2001: pp. 14-9). As raised in the previous passage, we hold the standpoint that technical drawing is not just a skill that objectively depicts the reality, it is an alternative way of knowing. And to be precise in this context, it is a designerly way of knowing. The project aims to tease out what are the possibilities when design methods or tools are infused into other different subjects and how a designerly way of enquiry could bring possibilities for education in different disciplines.

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THE BODY AS EAR: ACTIVE, EMBODIED LISTENING IN PARTICIPATORY DESIGN RESEARCH AND PEDAGOGY

Jill van Dugteren

Cape Peninsula University of Technology

Abstract

This paper was prompted by my participant observations as a facilitator on an Intensive Master's Course on Service Design with the Community. The study explores the challenges faced by the design students during the in-context contact and immersion, which characterise the experiential-oriented approach (Ho, Ma & Lee, 2011:96), ethnographic research and engaged participation, increasingly favoured by participatory design practitioners and educators. It acknowledges that with this approach, the role of the designer has expanded to encompass that of the researcher-facilitator-designer and that the students listening and participation are framed and validated by joint interactions with community participants, where the students need to grasp their role not as the expert designer, but as co-participants in the design process. Key here was not only what students need to think and know, but also who and what they needed to be and do, in their cognitively embodied interactions with others and their environments (Davis and Sumara, 1997). This study traces shifts in a student group's research and design practices from conquest to communion (Ezzy, 2010:164), from the detachment of visual data capture and the survey, towards an orientation around embodied listening and interaction. It aims to draw attention to the role that the attentive body can play in activating the space of research and design participation, affecting the agency and ownership of the design process and outcomes.

Keywords: *embodied listening, participatory design, experiential-oriented, conquest, communion, phenomenology.*

Introduction

Ernesto Sirolli's 2012 *TEDxEQ* talk is boldly titled: *Want to help someone? Shut up and listen!* Drawing on his own experiences and others like Dambisa Moyo (2010), particularly in relation to aid work in Africa, Sirolli (2012) emphasizes the significance of experts becoming beginners and actually *listening* to those they seek to assist. Sirolli's message is key to participatory design, which strives to actively involve users as "full partners" for the duration of the design process (Robertson & Simonsen, 2012:5). As noted by Melles, de Vere, & Mistic the *participatory* nature of participatory design, displaces the unilateral expertise and authority of the designer and this displacement - which facilitates participation - is fundamental to socially responsible design (2011:147-148). This displacement also highlights a key paradox of participatory design: How *not* to be the expert/ authority in your field, while drawing forth the voices and interactions of all participants. It is around this paradox and a shift in orientation towards embodied listening that this study will focus.

This study draws on my participant observations as a course facilitator on the second Intensive Master's Course offered by the User Centered Design for Innovative Services and Applications, the UFISA initiative¹. The underlying focus of these courses has been on user-centered design that

attempts to actively engage and empower the communities that the students are put into contact with; drawing on key tenets of participatory design, service design and community-based research². As outlined by Robertson and Simonsen, participatory design is based upon a significant premise: “When different voices are heard, understood and heeded in a design process, the results are more likely to be flexible and robust in use; accessible to more people; more easily appropriated into changing situations; and more adaptable to these situations over time” (2012:6). Melles et al. note, how particularly in the 3rd world context, a lack of user or community engagement leads to “band aid” or “parachute” interventions which instead of facilitating control and appropriation by the user, create dependency on 1st world manufacturing and supply chains (2011:148). Similarly with a lack of user/ community engagement and ownership, the design intervention can result in unintended adverse effects (Sirolli, 2012 in reference to Moyo’s *Dead Aid*, 2010). These concerns around dependency, community engagement and ownership caught my attention within the scope of this two-week intensive course.

Community context

As with the earlier debut course in 2013, this 2014 UFISA course titled *Service Design with the Community*, moved from the initial concept and method approach (Hecht & Maas, 2008:166-169), to the experiential-oriented approach posited by Ho, Ma and Lee (2011:96). This meant that after the first three days of classroom-based workshops around the relevant concepts and methods of community-based research, co-creation, participatory design and service design, the students were introduced to the Thamaga Pottery project in a village 40km west of Botswana’s capital, Gaborone. Established in the 1970’s, this pottery project was founded by the Catholic Mission with the aim to establish sustainable training and employment for women within the area, through the production of high quality ceramic tableware.

Key contact had already been established and nurtured within the Thamaga village context by the initiative’s hosting University of Botswana and this allowed for access and permission to interact with this community³. Despite support from the Botswana government and development agencies, sales of the ceramics produced at Thamaga Pottery were decreasing, salaries were unstable and many of the artisans currently employed were aging, with little interest shown by or transfer of knowledge, to the village youth. It was here that the experiential-oriented approach of this course came into play as the students were immersed within the community context in order to meet, observe and begin their co-design interactions with this community while fostering the above mentioned user/ community engagement and ownership (Sirolli, 2012).

The community-based experiential approach to design pedagogy reflects the growing significance of qualitative (particularly primary ethnographic) research as integral to informing empathic and socially responsible design processes (Kouprie & Sleeswijk Visser, 2009: 437; Melles et al., 2011:147-148). It marks the shift from the abstract, professional expertise and autonomy of the designer into a more horizontal, democratic relationship with the concrete, direct, lived experience of the user (Lefebvre, 1972 as cited in Lee, 2008:33; Kouprie & Sleeswijk Visser, 2009:438). This shift, focusing on the “fuzzy front end” of the design process (Sanders & Stappers, 2008:6), foregrounds a way of knowing that is directly dependent on the designer’s interactions with their research participants.

Findings

As a facilitator, my role was to guide the students in their research and co-design processes. What

this role significantly allowed was the space for me to observe their community-based research and co-creation in practice. It was from these observations that I began to question the sensory dominance assumed by sight-based observation within many ethnographic research practices (Pink, 2009:3) and the ramifications of this particularly in relation to other sensory interactions like listening. Although sensory perception is interrelated and interdependent rather than isolated (Connor, 2001; Pink, 2009:2; Wilson-Bokowiec & Bokowiec, 2006:55) it would seem that the privileging of sight, could promote access to objective 'data' captured from the margins, precluding the actual engagement and participation, which is key to the co-design process. As noted by Akama and Light we need to "short-circuit the Cartesian paradigm of viewing things at a distance" (2012:69), neutrally and objectively, and be critical of not only what participatory design methods do, but also *how* designers practise design participation when in the users' world (Akama & Light 2012:69; Bannon & Ehn 2013:41).

Sensing is an inherently social and cultural phenomenon (Downey 2002:490). We need to be aware of the control and exclusivity given to the "epistemology of the eye/ I" (Davis 1996:3) that roots far back into the Western knowledge traditions of Aristotle and Heraclitus⁴ and as noted by Schafer (2006), views aural societies as unprogressive in their passive inability to shape their acoustic universe. Listening I would argue is not only receptive, but active. We can choose to listen so that we elicit participation and communion (Ezzy 2010:164).

It is significant to note that we don't just listen with our ears, but through the resonance and response of our bodies. Through an "embodied listening" posited by Ouzounian (2006:73), the entire body is put on equal ground with the ears. We don't only hear sound. As pointed to by Roland Barthes (1977), sound does not float free of its source, but "drags along the material trace of its origin" (Downey 2002:495) while literally moving/ vibrating us (Connor 2001). Sound marks an event between physical phenomena, while listening points further, to an encounter between participants.

Capturing what is seen

While this listening, within the primary community-based research discussed here, effectively drew designers and research participants into the same space, it became clear that the positioning of the body around commonly used practices of (particularly visual) record, ignored, excused and disengaged the student's body. This was clearly evident in the initial project introduction (Figure 1 & 2) and begs the question of "reversibility of perception" put forward by Maurice Merleau-Ponty in terms of how our bodily presence and interactions engender a response in others (1945/1962 as cited in Dourish 2001:115).

As highlighted by Dourish (2001, 18:125) embodiment is a participative status. Drawing on the phenomenology of Martin Heidegger, Dourish notes that "our understanding of the world is essentially an understanding of how we are in it" (2001:107). The way in which we experience the world is tied directly to the way in which we act and interact within it (Dourish, 2001:18; Davis and Sumara, 1997). Questions began to emerge at this point like, how *do* we experience the world through our research orientations and instruments and their associated interactions? And how do we affect others through these? Also highlighted was the community as a research and pedagogical resource to be captured, along with the careful balance required as design and research pedagogy unfold and then significantly, the question of what remains once students/ researchers have left.



Figure 1 & 2: Supervisor introducing the Thamaga Pottery Project with students “listening” through their cameras, displacing the effect of their bodily presence.

In reference to Merleau-Ponty’s “reversibility of perception” above (1945/1962 as cited in Dourish, 2001:115), the students’ bodily disengagement behind the camera seen in the project’s introduction outside, was met with an initial response of closed focus and resistance by many of the nine busy women inside the pottery workshop. This was particularly noticeable in areas where the spatial arrangement of workstations and delicate ceramics, created a boundary that reinforced the women’s exclusive engagement with their tasks, (Figure 3 & 4 below).



Figure 3 & 4: Spatial arrangements of the pottery workshop (left) and the women’s focused attention on their tasks made initial interaction with the influx of sight-focused students and facilitators difficult.

So from this starting point, how was the goal of engaged and willing design participation met within this course? And what marks the shift towards embodied listening in the pedagogical and research practice of participatory design, rather than this initial focus on capturing what is seen? By following one of the 4 student groups who dealt specifically with the ergonomics and production processes of the pottery workshop, this shift can be traced through their research and co-design processes.

The conquest approach

While the body is clearly acknowledged in this groups initial research it was abstracted and quantified into the formal diagramme and rating scale of the Worker Discomfort Survey (Figure 5) which was

used to probe and elicit information, but in a way that could be seen to position these younger students as translators and ‘experts’ in relation to the older, skilled artisans. This points to Ezzy’s (2010:163) “conquest” approach to interviewing which he sees as typically focusing on the “cognitively articulated aspects of the interview”, like themed questions or the survey which plunders the participants for information, with little focus on the relational dynamics or embodied nature of this encounter. As Dourish notes, the survey approach often brings “analytic orientations from outside the specific setting of the investigation” (2001:59-60), that may hinder rather than enhance engagement and participation.

Occupational Health and Safety Council of Ontario (OHSCO)

Worker Discomfort Survey

Date ____/____/____ Job Name _____ Department _____

Shift _____ Hours worked _____ Years _____ Months _____
Time on THIS job

Other jobs you have done in the last year (for more than two weeks)

Note: If more than two jobs, only include those you worked on the most

Plant _____ Dept _____ Job Name _____ Months _____ Weeks _____
Time on THIS job

Plant _____ Dept _____ Job Name _____ Months _____ Weeks _____
Time on THIS job

1. Have you had pain or discomfort during the last year that you feel is job-related?
 Yes No (if NO, Stop here)

2. If YES, please rate the level of discomfort over the last MONTH by checking off the appropriate box using the scale of 0 to 10, with 0 being no discomfort and 10 being the worst discomfort experienced.

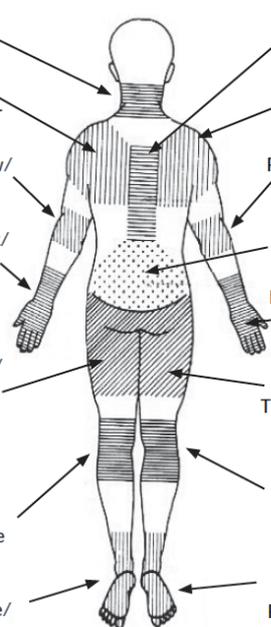
No Discomfort ↓ 0 1 2 3 4 5 6 7 8 9 10 ↓ Worst Discomfort Ever	<input type="checkbox"/> Neck <input type="checkbox"/> Left Shoulder <input type="checkbox"/> Left Elbow/Forearm <input type="checkbox"/> Left Wrist/Hand <input type="checkbox"/> Left Hip/Thigh/Buttock <input type="checkbox"/> Left Knee <input type="checkbox"/> Left Ankle/Foot		<input type="checkbox"/> Upper Back <input type="checkbox"/> Right Shoulder <input type="checkbox"/> Right Elbow/Forearm <input type="checkbox"/> Lower Back <input type="checkbox"/> Right Hand/Wrist <input type="checkbox"/> Right Hip/Thigh/Buttock <input type="checkbox"/> Right Knee <input type="checkbox"/> Right Ankle/Foot	No Discomfort ↓ 0 1 2 3 4 5 6 7 8 9 10 ↓ Worst Discomfort Ever
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Figure 5: The UFISA students *Worker Discomfort Survey* as derived from the Occupational Health and Safety Council of Ontario (Baitshenyetsi, Hendrickse & Ramasiagopana, 2014).

The attentive body

The shift for this group occurred when a group member began to work with and mimic one of the women performing her daily tasks of kneading and weighing clay (Figure 6 & 7). The student's concern became one of engagement and participation, rather than information, her body receptive to and registering the nuances of the woman's tasks. This speaks to Ezzy's alternative of the "communion" approach (2010:164) to interviewing, which shifts from the metaphors of control, probing and directing seen in the "conquest" approach (2010:163). Ezzy draws on the significance of emotionally framing an interview through the psychoanalytic theory of Jessica Benjamin and Luce Irigaray, particularly their respective notions of the "attentive openness" of communion and the "caress", as alternative ways of knowing (Ezzy, 2010:163-164). These alternatives seem to align with the presence, immersion and immediacy that characterize the receptivity and response to embodied listening, while also speaking to Merleau-Ponty's "reversibility of perception" (1945/1962 as cited in Dourish, 2001:115). Ezzy notes that the interview is shaped as much by how the body feels, interacts and co-resonates with the movements, facial expressions and sounds of others, as by "words framed by cognitive thoughts" (2010:165). What became clear was that the dominance of the visual and verbal could be reframed through the encounter of the listening 'attentive' body.



Figure 6 & 7: Student listening through her 'attentive' body to the actions of the clay artisan.

A similar shift occurred when this same student sat at an empty workstation and began mimicking the adjacent wheel artisan's actions, feeling what it would be like to be comfortable within her space (Figure 8 & 9 below). The embodied empathy of these like-actions and just being within the same space behind the boundary of the workstations and delicate ceramics noted earlier seemed to break through this artisan's focused reserve and an animated and engaged conversation followed.



Figure 8 & 9: Student mimicking the posture and actions of the adjacent wheel artisan (left) and then the animated and engaged conversation that followed (right).

Ezzy notes that while attention is given to themed lists or questions in ethnographic research, the emotional framing in terms of how the participant will be made to feel through our embodied interactions with them is often overlooked (Ezzy, 2010:163).

The moment of uptake

A third significant shift occurred when the other two members of this same student group began to dismantle and fix one of the machines that lay unused in the workshop. Having established from the earlier survey and the interactions around clay preparation that it caused repetitive strain, the pugmill, which mechanically compacts clay, was selected. Its previous user had passed away leaving no working knowledge of the machine (Baitshenyetsi et al., 2014). To be noted was how the interactions of cleaning and fixing this machine quickly disrupted the women's previous focus and reserve and drew many of them into this process. This included re-arranging some of the workshop's furniture and spatial flow. No academic research can really capture the infectious energy of hope and participation, the quickened pace and laughter as these women and students brought this pugmill back into operation (Figure 10 & 11 below). This marked the *moment of uptake* – significant as a space of high energy, spread agency and possibility, which carried through into the final co-design phase.



Figure 10 & 11: Pottery artisans keenly participating with the students in putting the Pugmill back together, either through their direct actions (left) or through their attentive bodies (right).

Context and body specific manual

Noteworthy was how this shift towards embodied listening also penetrated through into this group's co-design (Figure 12), which drew on the women's participation and ownership, placing the artisan concerned directly into an A1 laminated wall poster manual to be positioned in situ, explaining both how to operate and maintain the pugmill.

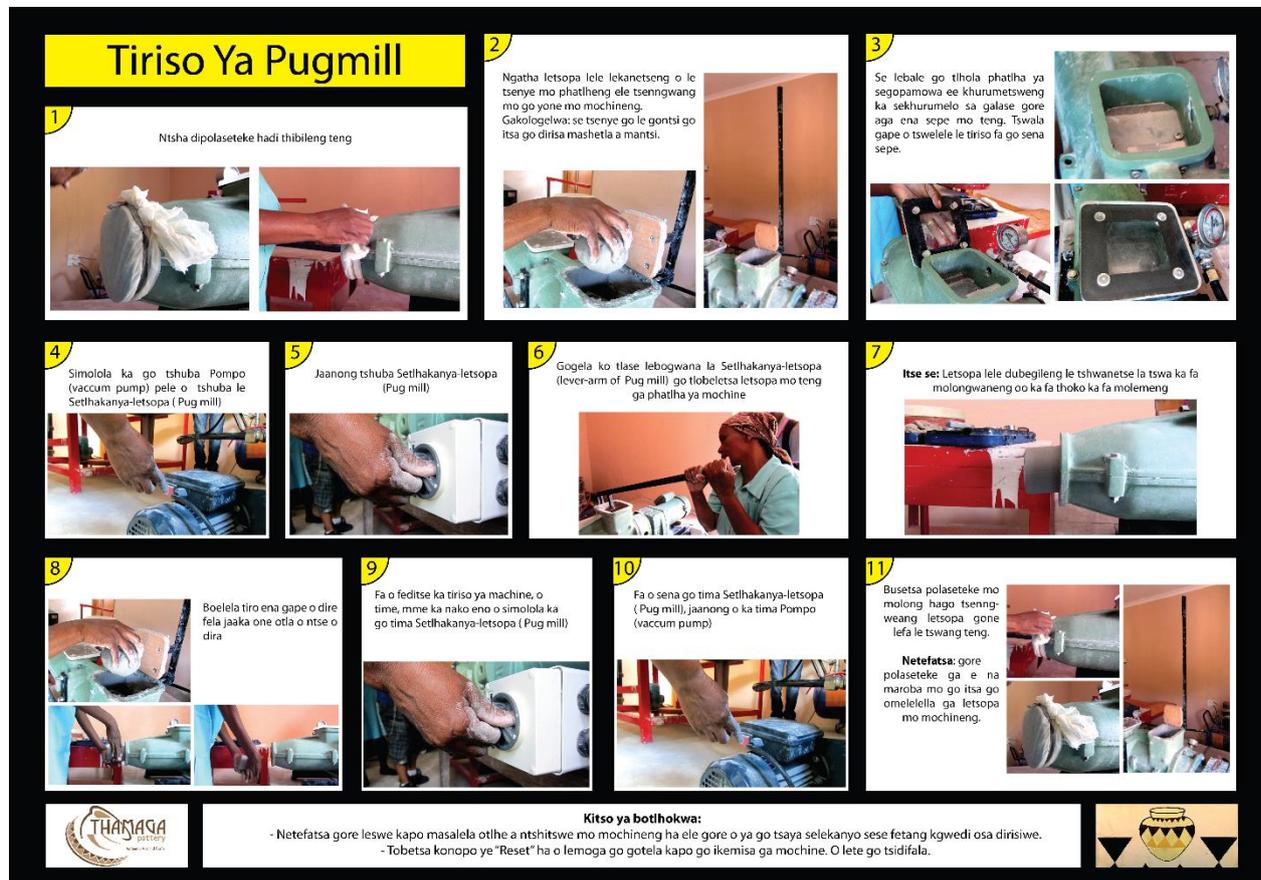


Figure 12: The pugmill manual created by the students and artisans (Baitshenyetsi et al., 2014).

Key to this design was the way in which it foregrounded the body in action, rather than just the machine or the instructions. The images co-created and the instructions in everyday Tswana were work-shopped directly with the women who had participated in the process. This wall poster manual answered to the ownership and agency of the participative action that had put the pugmill into operation. It also raised an important issue with further design potential. Due to good source funding, this pottery project had expensive items of equipment like a new digital kiln and generator, which were not being used because the women were not able to operate them and could not read or understand the complicated foreign language manuals.

Conclusion

Although just a taste, a key strength of this UFISA Intensive Master's Course was the opportunity it gave the students to experience and co-design with this pottery community. The shifts traced from the conquest to the communion approach (Ezzy, 2010:164) with this particular student group were marked by a re-orientation around active embodied listening. The body as ear: receptive, responsive, but also recognized as active in engendering a response in others. As noted by Akama and Light "the act of designing with groups of people involves an embodied knowing – at once affective, experiential,

phenomenological” (2012:62). This re-orientation acknowledges the participative status of embodiment noted by Dourish, (2001:18) while also recognizing the paradox of participatory design practice which sees the designer not as an external expert, but in an engaged partnership with the user that is not just conceptual but embodied and enacted. What became clear here was that the epistemic is not separated or given precedence over the ontological (Davis, 1996:2) as is typical with many current theories of education (Adams, Daly, Mann, & Dall’Alba, 2011: 591) which tend to weight towards the “education of the mind” and take little notice of the body as register (Senior & Dixon, 2009:26). This re-orientation could enrich the discourse on the “how” of participation in design practice and pedagogy that is pointed to by Bannon and Ehn (2013:41) and Akama and Light (2012:69) in order to activate agency and ownership of the design process and outcomes.

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Endnotes

¹ This UFISA Intensive Master's Course is part of a North-South initiative, which draws facilitators and students from three Finnish and three Southern African tertiary institutions. It was first hosted in mid-2013 by the Cape Peninsula University of Technology, in Cape Town, South Africa and then for the above-mentioned course in March 2014, by the University of Botswana in Gaborone. The Polytechnic of Namibia will host the next course in October 2014.

² These include willing participation of the affected participants rather than just involvement (Robertson & Simonsen, 2012:5; Sanders & Stappers, 2008:7), democratic and emancipatory empowerment of the user (Robertson & Simonsen, 2012:5) and mutual learning (Ehn as cited in Dindler, 2010:167).

³ An advantage of the UFISA North-South initiative is both this community access through the hosting university and the cultural and linguistic capital that is afforded by the spread of host students into each of the four research and co-design groups that the culturally diverse students were placed.

⁴ Aristotle viewed sight as the "principle source of knowledge" and Heraclitus said that "the eyes are more exact witnesses than the ears" Schafer (2006).

THE CHALLENGES AND COMPLEXITIES INHERENT TO MULTIDISCIPLINARY COMMUNITY ENGAGEMENT PROJECTS IN SERVICE LEARNING

Christa van Zyl

University of Johannesburg

Abstract

This paper reflects critically upon the challenges and complexities particular to community engagement through service learning. Though it is the intention of design students to achieve socially responsible outcomes they often face difficulties in achieving sustainable outcomes. The paper presents case studies of the 2014 FADA Green Week projects, devoting attention to the ways in which students identified problems and conceptualised design solutions, as well as the reception of the designs by the co-operatives involved. The paper argues that participatory design, through multi-disciplinary collaborative projects such as Green Week, can be positioned as a model for socially responsible design education that can help solve problems within communities in impactful and innovative ways.

Keywords: *human-centred design, service learning, multi-disciplinary approach, design thinking.*

Introduction

In 2014 *UJ Green Week*, an annual multi-disciplinary collaboration of the University of Johannesburg's Faculty of Art, Design and Architecture (UJ FADA), welcomed two valuable new collaboration partners: UJ Faculty of Business Management, and UJ Enactus. The latter forms part of an international organisation committed to using entrepreneurial action to enable progress. The 2014 theme was 'Community Matters'. The project's purpose was to stimulate students to apply knowledge of their various disciplines to innovatively solve an economic, environmental or social community-based problem for a given co-operative provided by Enactus, as part of a multi-disciplinary team. The project focused on participatory and human-centred design methods, within the university community engagement framework of service learning. 350 Third year students from all eight FADA departments and Business Management, were divided into multi-disciplinary groups. These thirty groups were introduced to fifteen co-operatives and small businesses from areas such as Soweto, Orange Farm and Alexandra, with two groups allocated per co-operative. Students had to interview stakeholders on challenges of their businesses, as well as social and environmental issues within their communities. Based on these interviews, site visits and a research folder provided by *UJ Enactus*, a needs-analysis was written by student groups to identify existing issues within the co-op that could be addressed through a multi-disciplinary design solution, which would be designed within the given week. Teams had to competently apply a range of design disciplines, processes and techniques to produce a presentation of their solution, accompanied by an executive summary of a business plan by Business Management members. Throughout the project students interacted with their allocated co-operatives, ascertaining whether solutions were sensitive to the co-operative needs and funds. The most successful design solutions were not representative of only one design discipline but, instead, approached problems from a multi-disciplinary perspective (UJ FADA Newsletter 2014).

Aim of the paper

This paper reflects critically upon challenges and complexities inherent to community engagement projects through service learning, as well as on the feasibility of student projects to achieve socially responsible sustainable outcomes.

Methodologies

The 2014 Green Week brief was developed on the basis of theories and models of human-centred design within a service learning framework. The paper presents case studies of two of the most successful, feasible Green Week projects, as viewed by the small co-operatives involved, devoting attention to design challenges, engagement strategies and design solutions of the multi-disciplinary collaboration. The paper includes student project descriptions, feedback and reflections after the project, with proper ethical clearance obtained from participants. The paper also uses information from UJ Enactus's 2013/2014 annual report and the Faculty of Management's 2014 Green Week Report to highlight positive outcomes of the project.

Human-centred Design

According to Richard Buchanan (2000) the aim of human-centred design is to support and improve human dignity economically, politically, socially and culturally. Based on this mission Buchanan summarises design as "the creative human power to conceive, plan and realise products that serve human beings in the accomplishment on their individual and collective purposes". The goal of human-centred design is to gain true understanding of stakeholders and their experiences in order to identify their needs, using empathy, respect and clear communication channels (Giacomm 2012). Kate Chemela-Jones (2013:38) states that within human-centred design "the focus should be on 'design for social good', through participation and empowerment" The ideals of human-centred design, specifically participation from stakeholders, suited the 2014 Green Week theme, requiring students to engage with the stakeholders. With a limited timeframe of five days, this presented student groups with a major challenge.

Service Learning

There are increasing expectations that South African higher education institutions should focus skills, energy and resources on community engagement. Institutions "must equip graduates to contribute to the country's social and economic development" (Rosochaki & Constandius, in Chemela-Jones, 2013:36). However, the principles of human-centred design need to be appropriately integrated into existing curriculums, based on one of three types of tertiary community engagement projects, namely community based research, organised outreach or service learning. According to Chemela-Jones (2013:36) service learning has achieved relative success in engaging and uplifting communities through human-centred design within tertiary education. Service learning is summarised by the UJ Community Engagement Office as structured collaboration projects with chosen communities, integrated into existing curriculums, which enable students to work with and help address community needs. Service Learning "seeks to infuse students with a sense of civic responsibility and promotes social justice" (UJ Community Engagement Policy 2009).

Design for Social change - Andrew Shea

In *Designing for Social Change* (2012), Andrew Shea lists ten strategies for community-based design. Of these ten the following six were integrated into the project structure:

1. **Immerse yourself** - Shea (2012:13) states that to "accurately understand a community's needs, it is extremely important to gain a thorough knowledge of the community and experience firsthand the lives and environment of community members ... (C)ommunity and organizational members (should be considered) as partners in all aspects of the design process". Students had to interview co-operative representatives on their businesses and communities after the project briefing on the Friday before Green Week. After the initial interview groups were also expected to go on site visits (see Van Zyl 2014).
2. **Build trust** - According to Shea, if designers "... build trust and understand a community's needs, [they] will become an invested partner... [Community members'] experiences should guide [the] research to an effective design solution" (2012: 27). Building trust within a community is a very complex process based on mutual respect. Whilst many students struggled with this issue, the process was simplified due to UJ Enactus's involvement with the co-operatives in the past.
3. **Promise only what you can deliver** - Within community engagement, specifically service learning, "problems deserve realistic solutions..., and the community will not benefit from idealistic promises" (Shea 2012: 41). The majority of groups not only designed branding and packaging, but also developed easy methods for co-operatives to create these themselves after the project (Sibeko 2014). UJ Enactus then chose top projects based on their feasibility, with at least one per co-operative involved, to obtain funding (UJ FADA Newsletter 2014).
4. **Design with the community's voice** - Whilst stakeholders may need design solutions, they will be more receptive to these solutions if designers apply the visual style of the community (Shea 2012: 111). Most groups focused on using colours and applicable typography based on their site visits, with hand-written elements (Enactus Annual Report 2014).
5. **Give communities ownership** - Designers should involve community members in the design process and highlight the importance of their feedback. "Designs that are driven by (a community's) insights and experiences will ensure that they will take ownership of it" (Shea 2012: 125). The actual brief was to identify problems *with* the help of the co-operative representatives (van Zyl 2014). This approach meant that design and entrepreneurial students and the community had an equal say in which fields of design were needed and what could feasibly be designed within the short time-frame.
6. **Sustainable engagement** - On this point Green Week had to differ from Shea's strategy, which recommends that designers become long-term consultants for the communities they are involved in (Shea 2012:139). Because of the time limitations and students' study responsibilities it would be unfair to expect a long-term engagement. Whilst some students expressed interest in seeing the outcomes of their involvement, most felt satisfied that they had fulfilled their obligations. Based on the project plan Management students would continue with the more successful solutions, seek funding, and build on achievements of the collaborative project. Thus there would be sustainable engagement from the University, albeit not by all parties involved. The added strategy of utilising the skills from the faculty of management student, only made possible by a multi-disciplinary, inter-faculty project, ensured top projects could be applied and potentially sustainable. This approach also addresses Buchanan's concerns in 2000 that "(d)esign today is fragmented ... and fails to provide the integrative knowledge of history, business practices, economics, technology, design theory and other subjects that could prepare students to be innovative in the new environment of design practice" (2000).

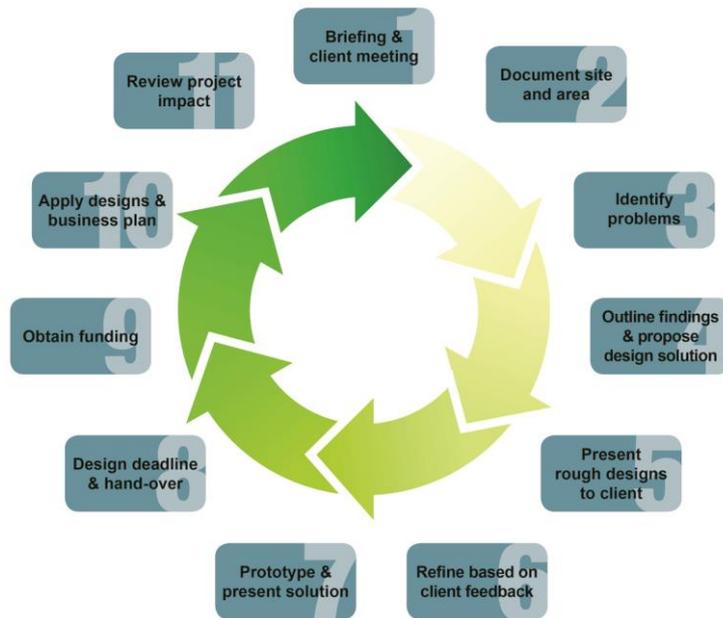


Figure 1: 2014 Green Week project structure

Process / Evidence

Based on Shea's strategies, within a service learning framework, a human-centred design project structure (Figure 1) was applied to the project plan, with the added process of Business Management students' project requirement to support co-operatives in actualising design solutions afterwards. The presentation of the following case studies are based on feedback forms filled out by students at the end of the project, as well as on project descriptions and UJ Enactus's Annual Report:

Case Study: Wake'E Bake

Disciples Village Bakery cooperative was launched 2006 by residents of Buhle Park to help curb poverty and support their community in Germiston, Johannesburg. Eight women were trained in baking and computer literacy in order to offer quality baked goods at an affordable price in the area (Sibeko 2014).

Design Challenge

Group 27, consisting of students from Graphic, Multimedia, Fashion and Interior design as well as Business Management, identified marketing and transport as two of the biggest issues that Disciples Village Bakery struggled with (Sibeko 2014).

Engagement Strategy

The group reviewed all documentation provided by Enactus. After an initial discussion on group dynamics and meeting times students contacted the co-operative and organised a site-visit of its bakery. Students documented the journey, area and premises through photography and video. At the premises students interviewed stakeholders on their requirements, making suggestions, but most importantly listening to what the co-operative needed (*Wake'e Bakee* 2014) which approach ties in with Shea's strategy (Shea 2012: 125).

Design Strategy

Based on their research and interaction students concluded that the bakers had to bake, package and transport their goods very early to sell it at hotspots such as traffic lights, schools and train stations.

For this reason branding, packaging and point-of-sale were identified as focus areas to increase business growth (Wake'e Bakee 2014). Group 27 rebranded Disciples Village Bakery to Wake'e Bakee, giving the business a more playful, modern style. They also assembled a start-up kit for new and established bakers, contained within a light trolley to transport and distribute the fresh baked goods. The kit included a branded uniform in the form of a dual-sided apron useful for baking and selling, a stencil kit to brand packaging and a light-weight tray to be fastened around sellers' necks, increasing their mobility (figure 4). Group 27 also branded existing inexpensive paper bags using stencils, making Wake'e Bakee packaging relatively inexpensive to reproduce, re-useable and recyclable. For marketing their multimedia group member designed a functioning website, Smartphone app and Facebook page to help consumers find the bakers (Wake'e Bake Business Plan 2014).



Figure 2: Design solution, 2014 (Wake'E Bake 2014). Concept board.

Outcomes

Group 27's hard work, innovative and cost-effective design solutions, clear final presentation and thorough business plan impressed both FADA and Business Management judges. They were voted most successful design solution by the Green Week judges (FADA Newsletter 2014).

Based on the new branding Wake'e Bake was subcontracted by the Buhle Park mayoral *imbizo* to provide catering, making a profit of R40 500 (Enactus Annual report 2014). With the help of Management students from Enactus the co-operative also received seed money from City Lodge Hotels to apply their branding, as well as eventually become an official supplier to their hotels (Sibeko 2014).

Case Study: Gold Soil Herbal Manufacturing

Gold Soil from Dobsonville, Soweto, Johannesburg, was started in 2011. The co-operative grows, harvests and sells herbs as well as teas, spices and herbal remedies. Gold Soil members also cultivate food and herb gardens at local schools, teaching learners about agriculture, herbs and remedies (Sibeko 2014).

Design Challenge

Group 7 consisted of students from graphic, multimedia, fashion, industrial and interior design as well as architecture and business management. Students identified branding, marketing, transport and distribution as Gold Soil's biggest needs. Whilst Gold Soil had a recognisable name, they did not have existing branding, limiting their potential customer base. The co-operative re-used old bottles, small plastic bags and newspaper to package products, which meant herbs did not retain their freshness. This basic packaging also created a poor impression with customers, leading to lower customer retention. Gold Soil also had no way to distribute and transport their products, meaning customers had to visit their business premises to purchase herbs (Sibeko 2014).

Engagement Strategy

Based on videos provided by Group 7, students went on a site visit of the business premises, area and a school food gardens. Students interviewed members of the co-operative about their needs, vision and mission. They also interviewed learners at the school about Gold Soil's teaching, and had co-operative members demonstrate preparation methods for products (Gold Soil 2014).

Design Strategy

Group 7 designed recognizable branding and stationary for Gold Soil, adding the tagline 'Turning soil into gold'. They also designed practical, easily-assembled packaging for popular products, namely teas, spices and cosmetic medicines. Ecologically friendly materials such as cardboard and cork were used. All packaging was branded using vinyl printing pads and a hand-made printing press, an inexpensive printing method the co-operative could easily use after the deadline. Lastly the industrial design student designed a concept branded 'Herb Wagon' (figure 7). The design functions as both transport and a fold-out market stand. Multimedia students also filmed and edited a promotional video, as well as videos on how to assemble packaging, practical for marketing and training (Sibeko 2014:14).



Figure 7: Gold Soil Design solutions, 2014 (Gold Soil 2014). Concept board. Auckland Park, Johannesburg.

Outcomes

Based on their new branding and promotional video Gold Soil received a contract to facilitate educational workshops for the KwaNongoma community in Kwazulu Natal on agriculture and herbal remedies. They earned R25 000 from this contract (Enactus Annual Report 2014). Gold Soil has also received a sponsorship to realise business goals, and they are using their branding on all products (Sibeko 2014).

Interpretation

Challenges and complexities experienced during both projects can be divided into three categories: unequal participation within teams, communication issues and logistical problems. Group participation was addressed in the weighting of marks, with group participation rated by fellow group members counting 40% of the final mark. The project was also plagued by unexpected logistical problems, such as too few chairs available on campus for this big collaboration. Students also complained about communication problems due to language barriers, lack of client feedback, travel difficulties and the unavailability of some stakeholders. Whilst two separate meeting times and transport money were provided, some stakeholders still could not attend the Friday or the following Monday briefing due to prior engagements, employment or poor communications. This is a major issue in community engagement projects that need to be addressed in Green Week 2015. A collaboration between fairly affluent students and struggling small businesses led to a lot of introspection in student feedback, with some students stating their experiences as a serious eye-opener as to the issues surrounding design for positive sustainable change.

Student feedback was varied, although most students who completed the forms stated that they enjoyed applying their skills to affect positive change, and expressed hopes that their projects would be utilized. After the client-handover *UJ Enactus* assisted in obtaining the necessary funding and helped to realise the most viable of the projects in order to make the design solutions a reality (UJ FADA Newsletter 2014).

Conclusion

Because of the entrepreneurial focus of *UJ Green Week 2014* many design solutions focussed on branding, packaging and marketing, with a few innovative product designs (Sibeko 2014). Though some challenges and complications were experienced, they were not insurmountable – positive outcomes far outweighed the negative. The most successful design solutions were not representative of one design discipline but, instead, approached problems from a multi-disciplinary perspective. This led to well-rounded solutions that could more easily be adopted by the co-operatives.

By framing design projects as a problem-led praxis situated within and constrained by complex communities, students learn skills that allow them to enter the world as aware innovators who feel comfortable approaching communities to offer support by means of socially relevant and responsible design. Human-centred design projects such as these increase students' confidence in their own abilities and improve their communication skills in terms of functioning in a multi-disciplinary team, as well as in working with a client.

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ADDRESSING THE NEEDS OF THE OTHER 90% - THE ROLE OF CYCLING IN DEVELOPING THE SUSTAINABLE AGENDA IN JOHANNESBURG

Amanda Breytenbach

University of Johannesburg

Giovanna Di Monte

University of Johannesburg

Abstract

Cycling is an energy efficient nonpolluting form of transport and is considered as one of the most sustainable means of transport. In South Africa cycling has been poorly recognized and supported by government and citizens as a sustainable mode of transport. However, drastic changes are proposed for the transport systems in the City of Johannesburg (also Joburg) and citizens are showing a growing interest in cycling for both recreation and commuting purposes. This paper investigates the changing cycling culture in Johannesburg and the extent to which cycling is recognized by government and included in the development of a sustainability agenda that addresses the socio-economic needs of Johannesburg citizens. National cycling projects, cycling associations and cycling events such as the monthly Johannesburg Critical Bike Mass Ride events are briefly described and used as reference points to illustrate the growing interest expressed by non-profit organizations and citizens to accommodate cyclists on public roads. This investigation aims to make a contribution to the sustainable design project through reflecting on a drastic proposed change for Johannesburg city transport which will impact on various design disciplines that can provide specialist knowledge in the development of a sustainable transport system. This paper therefore acknowledge the complex dynamic system in which society operates and argue that through paying attention to the needs of citizens, designers can become co-creators within the system.

Keywords: *Cycling; sustainable transport systems; cycling projects, non-motorized transport.*

Introduction

Investigation into the research topic did not commence in the theoretical realms of academe but through the personal interest that both authors share – weekend cycling. Through our personal involvement in cycling, we noted a steady increase in cycling events associated with a growing interest in cycling in Johannesburg. Christina Culwick (2013:147) explains in her reflection on non-motorised transport (NMT) in Gauteng that the popularity of recreational cycling is contributing to a growing bicycling culture in the region. Our personal observations generated the main research question for this paper – how can the increase in a cycling culture benefit the sustainable development of Johannesburg for all citizens?

We discovered early in the research investigation that the increase in a cycling culture is not merely a coincidental event, but it is assisted by organisations, campaigns and movements that attempt to increase the profile of non-motorised transport with particular focus on cycling. City cycling events

such as 94.7 Cycling Challenge and the Nelson Mandela Freedom Ride events have the firm support and assistance of the Gauteng Department of Public Transport and the City of Johannesburg.

The importance of cycling as a means of transport is evident in the development and implementation of national, regional and City of Johannesburg transport policies and frameworks. Reflections on international cycling cities assisted in identifying the valuable contributions that a shift from a heavily motorised transport system to a safe, environmental friendly and affordable non-motorised transport system can present in the development of sustainable city centers. Culwick (2013) indicates that “rural, marginalized and poor communities have the greatest need and dependence on NMT”. Unfortunately, NMT forms of transport are often associated with the perception that it is utilised by people that cannot afford private vehicles and public transport costs. This paper therefore describes the drastic changes proposed for the City of Johannesburg, which aims to change the current marginalized, unsustainable transport system towards a more affordable, sustainable inclusive system that will address the need of the *other 90%*.

In the Integrated Transport Master Plan for Gauteng (2013) it is proposed that over the next 25 years a new transport hierarchy will be introduced placing pedestrian at the top, followed by cyclists, thereafter public transport and finally private vehicles. Through our investigation into the radical changes that are proposed in the complex transport system, we identified that designers can make a valuable contribution as co-creators of the new proposed system. In order to understand radical change we incorporate Gladwell’s social tipping theories and the Green Building rating system to discuss the contributions that designers, both practitioners and researchers, can offer in the development and implementation of a cycle-friendly city for all citizens.

Cycling as a sustainable means of transport

Many extensive non-motorized transport (NMT) programs exist in both developed and developing countries. These programs support ‘green mobility’ which has multiple benefits for the environment and the society that inhabits it. Non-motorized transport modes like walking and cycling complement other transport modes and are considered as an integral component of a transport system.

The benefits of cycling as a sustainable means of transport- international perspective

Bicycling does not only enable quicker and sustainable mobility; but also has cardiovascular and other public health benefits that promote well-being of citizens (Buehler & Pucher 2010:36, Cervero, Sarmiento, Jacoby, Gomez, Neiman 2009:205). From a city planning perspective the introduction of bike-sharing schemes enable affordable mobility and the bike-on-transit schemes integrate bicycles in city centers within the public transit system (Advani & Tiwari 2006:8). The small space requirements for bicycling benefits high traffic areas, enable ease of navigation and utilize existing infrastructure. Finally, if cities continually grow and change according to cycling concerns and use bicycle promotion systems, a society can improve sustainably responsibility and nurture its sustainable environment. Cities with extensive NMT programs like Amsterdam (Netherlands), Copenhagen (Denmark) and Bogotá (Columbia) change and adapt bicycling policies continually. Pro-bicycling measures vary in these cities and present various benefits to city planners and commuters.

Developing cycling as a sustainable means of transport in South Africa- national projects

South Africa looks to the role-model cities above as it begins to promote sustainable mobility. There are a number of bike-empowerment programs that contribute to the increase of a sustainable cycling culture in South Africa which place particular focus on school learners and poorer communities.

Shova Kalula is a state run national bicycle partnership project which was launched in 2001. The project's primary intention is to target school children from poor households that are situated in both rural and urban areas that have to walk long distance to access their schools (Shova Kalula Bicycles for school kids. 2012). Two private sector projects, Qhubeka and Bicycle Empowerment Network (BEN) also aim to introduce cycling as sustainable form of transport in disadvantaged communities. Qhubeka's slogan – Mobilizing People with Bicycles- explains the non-profit organization's aim to assist in empowering people to access their distant places of work and study and therefore improve communities and their environment (About Qhubeka [s.a.]). The organization further embraces long-term sustainable principles through assembling the bikes locally, training mechanics and providing affordable bikes that meet the needs of the rough terrain in rural areas and load requirements of the users. The Cycling Empowerment Network (BEN) South Africa, established in 2002 in Cape Town, addresses poverty and mobility through the introduction of bicycles in communities. BEN introduces imported bicycles, obtained from overseas countries, into the communities and also plays an active role in encouraging cities to introduce bicycle planning and infrastructure.

Cycling as a sustainable means of transport in Johannesburg – Future vision for the city

In 2013, during the State of City Address, the Mayor of Johannesburg Mpho ParksTau, presented the concept of 'Corridors of Freedom'. The Mayor described the proposed project as a change that "will forever change the urban structure of Johannesburg and eradicate the legacy of Apartheid spatial planning" (Tau 2013:5). The transport corridors propose to connect and improve mobility between strategic nodes, such as Rosebank, Inner City, Sandton and township CBD's. Furthermore, these corridors are envisioned to increase the ease of change between different transport modes and include dedicated cycling lanes that can also connect public system such as the Rea Vaya (Bus Rapid Transit system) and the Gautrain stations with the surrounding areas. An effective, affordable and sustainable transport system is considered as an important component in a spatially integrated city. In order to achieve the city planners propose to eliminate the need for private vehicles over the next decade and replace cars with an effective public transport system, cycling lanes and pedestrian walkways (Tau 2013:6).

To assist in enabling the future vision for the City of Johannesburg, a Strategic Integrated Transport Plan Framework (SITPF) was developed and adopted in October 2013 (City of Johannesburg 2013). The Integrated Strategic Transport Plan Framework (City of Johannesburg 2013:14) aims to build, maintain and manage public transport with NMT infrastructure and promote public transport, walking and cycling as modes of choice in Johannesburg (see figure 1). The SITPF (City of Johannesburg:16) identifies that cycling currently accounts for 0,2 per cent of NMT. This could be because almost no provision is made for cycling lanes in Johannesburg and in order to introduce this alternative form of transport, radical changes needs to be made to the current city transport infrastructure. To assist in developing the transport transformation and increase in utilizing bicycles as a mode of transport, the government has donated bicycles in townships such as Tshepiso and Orlando in the last year, and is currently setting up a Bike Empowerment Centre in Soweto. It is therefore evident why that Mayor

Tau referred to City of Johannesburg as a “City at work conducting a Green Revolution” in his State of the City Address, delivered in April 2014 (Tau 2014).

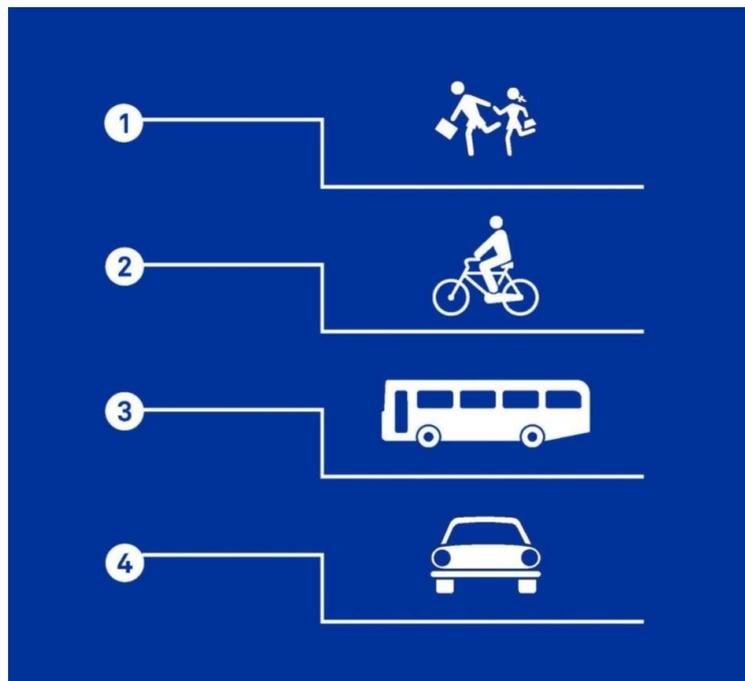


Figure 1: Changing hierarchy in Johannesburg’s street as illustrated in the Integrated Transport Master Plan for Gauteng (2013: 72)

A growing cycling culture in Johannesburg – finding the voice of the citizens

To this point we identified and presented the perspective and strategic objectives of the National Government and City of Johannesburg to transform the transport system and introduce a sustainable transport system that will improve connectivity and mobility. We will move the focus towards the growing cycling culture to indicate the support citizens lend towards cycling in the city.

Annual Cycling Events – promoting cycling amongst citizens

In South Africa many large scale cycling events take place annually that display the support for cycling as both a professional sport and recreational activity in the larger city centers. The two most prominent events are the Cape Argus Pick ‘n Pay cycle tour (around 109 km) taking place in Cape Town and the 94.7 Cycle Challenge (95 km) in Johannesburg. The Cape Argus cycle tour is the world’s largest individual timed cycling challenge and it attracts around 35 000 national and international cyclists annually (Cape Town’s spectacular Cycle Tour [s.a.]). This event originates from a Big-Ride In event that was organized by Bill Mylrea and John Stegmann in 1978 in an effort to draw the attention to the need for cycle paths in Cape Town (Cape Town’s spectacular Cycle Tour [s.a.]). In 1997, an equivalent long distance cycling event - the 94.7 Cycle Challenge, was introduced in Johannesburg and it grew rapidly to become the second largest timed cycling challenge in the world. This event draws a wide audience of participants ranging across age groups and from novice to professional cyclists. In 2013, a record breaking number of people of 31 500 took part in the 94.7 which indicates a continuous increase in cycling in South Africa (Most successful Momentum 94.7 Challenge ever. 2013). The event is supported and co-organized by the City of Johannesburg with event organizers and sponsors such as the radio station 94.7 Highveld Stereo.

Critical Mass Bike Rides

Blickstein and Hanson (2001:351) explain that the Critical Mass Bike Ride (CMBR) movement started in 1992 in San Francisco. The original bike ride was organized as a monthly rush hour ride which aimed to increase the visibility of bicycling in the city. From 1992 to 1997 the monthly mass rides grew from only 45 cyclist to more than 5 000 (Blickstein and Hanson 2001:351). The concept of the monthly critical mass cycling events in San Francisco expanded rapidly to neighbouring towns, cities and even countries across the world. It is evident that the core problem of mobility in city centers is shared by citizens across the world and participants in the Critical Mass cycling events attempts to raise awareness and 'public-protest' against these problems. Citizens therefore consider the bicycle as a tool to address the mobility problem and assist in providing a long term sustainable solution (Blickstein and Hanson 2001).

The popularity of the Critical Mass events were also introduced to city centers in South Africa. Critical Mass was founded in Johannesburg in 2007 by James Happe and Loic Bellet and "reignited by Louise Denysschen, Melvin Neale and Shaun van den Burgt in 2011" (Critical Mass Johannesburg [s.a]). The introduction of the event in Johannesburg was two folded; it aims to bring people back into the city center of Johannesburg and similarly to Critical Mass events across the world it also aims to raise awareness about the viability of bicycles as a form of transport in and around Johannesburg. Road closures do not take place for the events that take place on the last Friday each month at 19h00, but road assistance and support is available which contributes to a creating a safe cycling experience. The Johannesburg events take place after the peak traffic period and in contrast to the original event in San Francisco, the CMBR event in the city center does not impact on peak traffic activities. The CMBR in Johannesburg is well supported by cyclist and similar to organized cycling events; it contributes towards to developing cycling awareness amongst citizens in the City of Johannesburg.

Johannesburg Urban Cyclist Association (JUCA)

The Johannesburg Urban Cyclists Association (JUCA) plays a very active role in transforming Joburg in a cycle-friendly city. JUCA is a volunteer-based organization that strongly promotes the inclusion of bicycles within the day-to- day transport system. The organization has expert advisors on their management committee, one such as person is Rehana Moosajee who is a non-motorised and public transport expert. The organization acknowledges on their website that the transformation towards a bike-friendly city will "required massive changes in infrastructure as well as in mindsets" (Johannesburg Urban Cyclists Association. [s.a]). JUCA was therefore put in place as a formally structured organization, by citizens, to interact with government policy makers and represent specifically bicycle commuters (Blaine 2014). The mayor, Parks Tau has publicly acknowledged the contributions and advised that has been made by JUCA on developing a bicycle strategy for the City of Johannesburg. JUCA's vision is to have the City of Johannesburg bicycle friendly by 2015.

How can designers contribute towards change for a new transport system?

In the section of this paper, a brief discussion is presented around the contributions that designers, both practitioners and researcher, can offer in the successful development and implementation of a new NMT system in Johannesburg through applying Malcom Gladwell's social tipping point theory and considering the role of the Green building rating systems.

Radical change in a system – Tipping Point Theory

The successful implementation of a new transport framework is depended on a number of factors of which one is the transformation of the collective social behavior of all citizens and road users in Johannesburg. In research conducted by Phillip Ball (2004) around critical mass he investigates how one action or event can lead to another action/event. These actions include change in social behavior patterns. Malcolm Gladwell (2000) describes the dramatic points of change as a tipping point. Three components are identified by Gladwell (2000) that can contribute to the change in the exiting equilibrium or social behavioral patterns. These are; a carrier/messenger; an infectious agent/message; and the environment in which these operate. By fiddling with these components, an epidemic or social situation can in one sudden moment tip, spread, magnify, remain stable or otherwise reverse and weaken. Gladwell (2000) discusses these three components under three theories: the 'Law of the Few'; the 'Stickiness Factor'; and the 'Power of Context'. Gladwell suggests that to encourage tipping points requires of individuals or groups to "reframe the way we think of the world" (2000:257).

In reflecting on Gladwell's Tipping Point theory this paper argues that designers can play important roles in assisting to transform the environment which will be required to sustain a safe, easy and reliable NMT system in Johannesburg, since social patterns are strongly influenced by conditions and particulars of the environment it operates in (Gladwell 2000). The 'Power of Context' theory explains that peoples' actions depend on their surroundings. Gladwell (2000) indicates that 'Innovator' groups or individuals take risks to try something new and 'Translator/Connector/Maven' groups transform ideas to make it work. These 'Translators' can tip critical points so that a social epidemic can reach the general 'Late Majority', who will actually use these ideas practically. The roles of the innovator, translator or maven can all be fulfilled by designers and can assist in introducing alternative workable solutions or to contribute expert knowledge that assist in changing over to a new system.

Designers can be seen as a group of *Innovators* that can create and introduce sustainable solutions in our cities. Designers act as an *Innovator Group* and also *Mavens* (knowledgeable case-makers or co-experts) who can contribute expert knowledge in solving sustainable transport systems. Solutions can be presented by a broad range of designer disciplines such as urban designers; engineers; landscape designers; architects; interior designers and product designers. Bicycle-oriented Design (BOD) must evolve and spread to all parts of the new transport system to ensure holistic approach and resolution to the problem. The idea of a sustainable lifestyle has clear benefits, the message is strong and has '*Stickiness*', and designers can educate one other, young professionals and their clients in order to become co-creators in future development of the city.

Incorporating transport within the design of green buildings

McGraw-Hill Construction (2013:34) recently released results of a study on green building trends. It states that in South Africa "...green building [is] growing at a faster rate than any other part of the world...". It shows that the percentage of firms with more than 60 per cent of green activity will triple in South Africa between 2012 and 2015. Green building councils and their relevant set of rating systems exist world-wide – e.g. USA (LEED); UK (BREEAM); Netherlands (BREEAM.NL); Australia (Green Star Australia); Japan (CASBEE); South Africa (Green Star SA). All of these rating systems have various rating tools for various applications (e.g. New Construction tool), each with various categories (e.g. Materials). All rating systems have transport added in or as part of a category. Designers must design with credits in mind in order to gain a high score. Each credit is further detailed – e.g. Cyclist

facilities include requirements for types of cycle racks. All rating tools in Green Star SA are continually being revised. Designers are important role players in addition to the list of role players identified by the Framework for non-motorized transport in Johannesburg (2009:17-18). With green building, designers are able to accommodate non-motorized transport (on a large-scale to a detailed level), and while green building grows in South Africa, the numbers of users may increase as a sustainable environment may create sustainable living.

Conclusion

The paper identifies that the City of Johannesburg is preparing for drastic change in both the approach and design towards the city's public transport system. Cycling is currently the least used mode of transport, but is proposed to become one of the most important non-motorised transport modes in Johannesburg. The paper identifies that the proposed increase in bicycle users will require not only a redesign of the transport infrastructure but will require of citizens to embrace and adjust towards a city cycling culture. Although this radical shift can present various benefits to the city infrastructure, the citizens and the environment, this project can be doomed during the early developmental stages if a holistic project approach is not included. A top-down implementation plan from the government and city policy-makers, that aim to introduce a long term sustainability solution for the city, should also consider a drastic shift that within the daily transport behavior of citizens.

Although this paper identifies a growing support toward a cycling culture in Johannesburg, it is noted with concern that current cycling events takes place with the assistance of road closure and/or traffic control support. Citizens are showing a growing interest in supporting organized events or group activities that will ensure safe road usage. Daily cycling commuters continue to describe the city's roads as dangerous and unsafe for cyclist. The successful implementation of the Integrated Strategic Transport Plan Framework will assist in presenting a radical shift in ensuring that dedicated cycling lanes will provide safe, quicker and far less expensive commuting opportunities to the citizens.

Finally, the shift towards an increase in non-motorised transport modes presents many opportunities to the designers and design researchers. By reflecting on Gladwell's Social Tipping Point theory designers can, across various design disciplines, make valuable contribution in introducing a more holistic design process that will ensure that the change in transport focus is introduced and accommodated within the broader supporting context. Landscape architects, architects and interior designers need to ensure that the transition towards a cycling culture is supported within the immediate context that will support the daily activities of commuters. Through paying attention to the needs of cyclist, and implementing Green Building rating systems, designers can become important co-creators within the proposed new transport system.

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APPLYING GENERATIVE TOOLS IN THE CO-DESIGN OF DIGITAL INTERACTIVE PRODUCTS IN DEVELOPMENT CONTEXTS

Terence Fenn

University of Johannesburg

Abstract

This paper begins by briefly introducing three key concepts. Firstly, the value of design prototypes within human-centered design practice. Secondly, the difficulties of using design prototypes when designing interactive products with and for developing communities. Thirdly, the value of storytelling as an alternative mode of creating shared understanding between designers and community participants. The paper then proceeds to position Generative Tools, Personas and User-journeys as three design methods that collectively, connectedly and reciprocally utilize storytelling to communicate understanding. By referring to an ongoing co-design project involving farmers from Soweto, the paper then explains how these design methods can communicate, at various times, the contexts of the users and the interpretation of these contexts by the designer in a manner that is accessible and valuable to all participants of the co-design team

Keywords: *co-design, interaction design, generative tools, personas, user-journey design.*

Introduction

Interactive digital products have immense power to improve the lives of others. The role of information and computer technologies (ICT) as an enabler of solutions that respond to the needs of developing communities¹. has long been recognised (Manson, 2011 A [O], Vrasidas et al, 2009:3).

Problematically, inaccessibility to ICT, due to inappropriate design product is prevalent in developing communities (Malony, 2006: 1-2). In order to better understand the needs of the community and subsequently provide solutions in response to these needs, many designers working in development contexts have applied participatory modes of human centered design (HCD). Co-design, which is the form of Participatory Design used in this study, involves engaging with everyday people as “experts of their own experiences” during the design process in order to understand current practices and to envisioning alternative practices (Steen 2011: 52).

Within most HCD methodologies, the design prototype is used as the principal tool that focuses and fosters communication between the designer, the community and stakeholders. However the design of interactive digital products, which often rely on programmable software to operate, present a different set of problems for participatory design projects. Often, as will be discussed in detail in subsequent sections of this paper, participants from development communities do not often have the experience to conceive opportunities offered by technologies driven by software nor are they able to interact with many of the prototype conventions found in interactive design practice. Thus community participation in the design process can be limited

In response to this dilemma, this paper positions three design methods; *Generative tools*, *Persona diagrams* and *User-journey design diagrams* as viable design tools for co-designing digital interactive products with development community participants.

Discussion

Design Prototypes

Design prototypes take tangible forms that imply how a final design product or aspects of the final product will look, feel or behave. As such in HCD a prototype can be considered as a designer's creative hypothesis for solving the design problem that reflects the designer's interpretation of the aspirations and needs of the community. In HCD prototypes are generally constructed in such a way as to allow the community participants involved in the evaluation of the design to understand the decisions taken by the designer and to accept or refute aspects of the design during feedback sessions. This feedback allows the designer to amend the prototype and then retest with users. Prototypes are often described in terms of their fidelity with a *low-fidelity* referring to a prototype that is in its early stages of conceptual and formal development and *high-fidelity* implying a prototype very close to the intended final product (Rogers, Sharp and Preece 2012: 390). Much of the success of prototyping in HCD relies on the community participants' ability to conceive the uses, affordances and constraints of the designed product and its materiality through an engagement with the prototype.

Interaction Design Prototypes

In the discipline of interaction design (IXD), which in this paper is understood as the design of interactive products that support the way people communicate and interact in their everyday life (Rogers et al 2012: 9), the development of prototypes for user-testing is pervasive (Rogers et al 2012: 390, Cooper 2007: 70). Examples of different types of prototypes used in IXD include: scenarios (Cooper 2007: 111), Sketching (Rogers et al 2012: 393), work-flow models (Cooper 2007: 106), user-mapping diagrams, **Figure 1**, (Caddick and Cable 2011: 79) task-models (Caddick and Cable 2011:45), wireframes, **Figure 2**, (Caddick and Cable 2011: 161), low-fidelity interactive products (such as simple paper-based mock ups, **Figure 3**, (Rogers et al 2012: 392), and high fidelity interactive products (such as beta- sites).

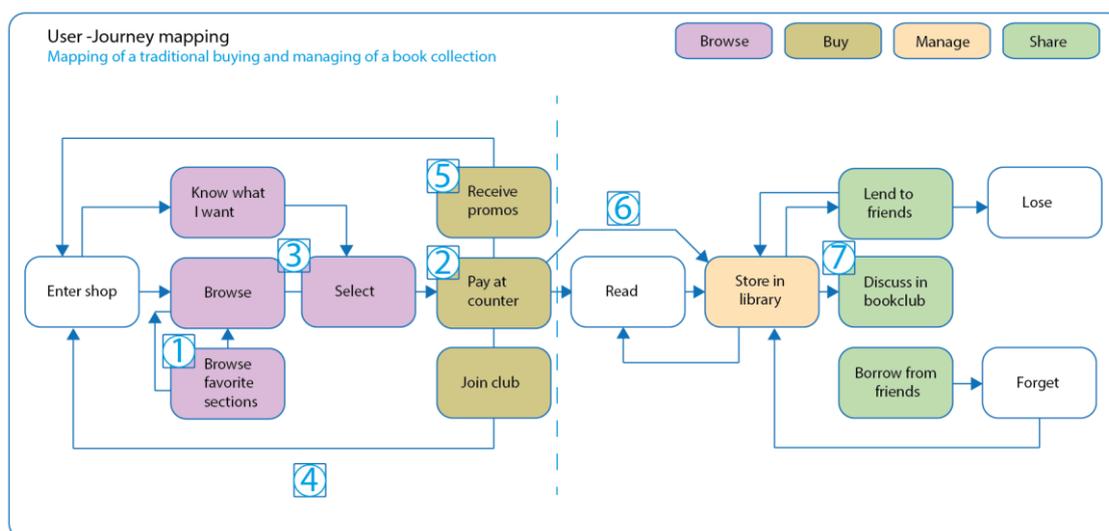


Figure 1: An example of a simple User-journey mapping showing the lifecycle of a user's relationship to a book.

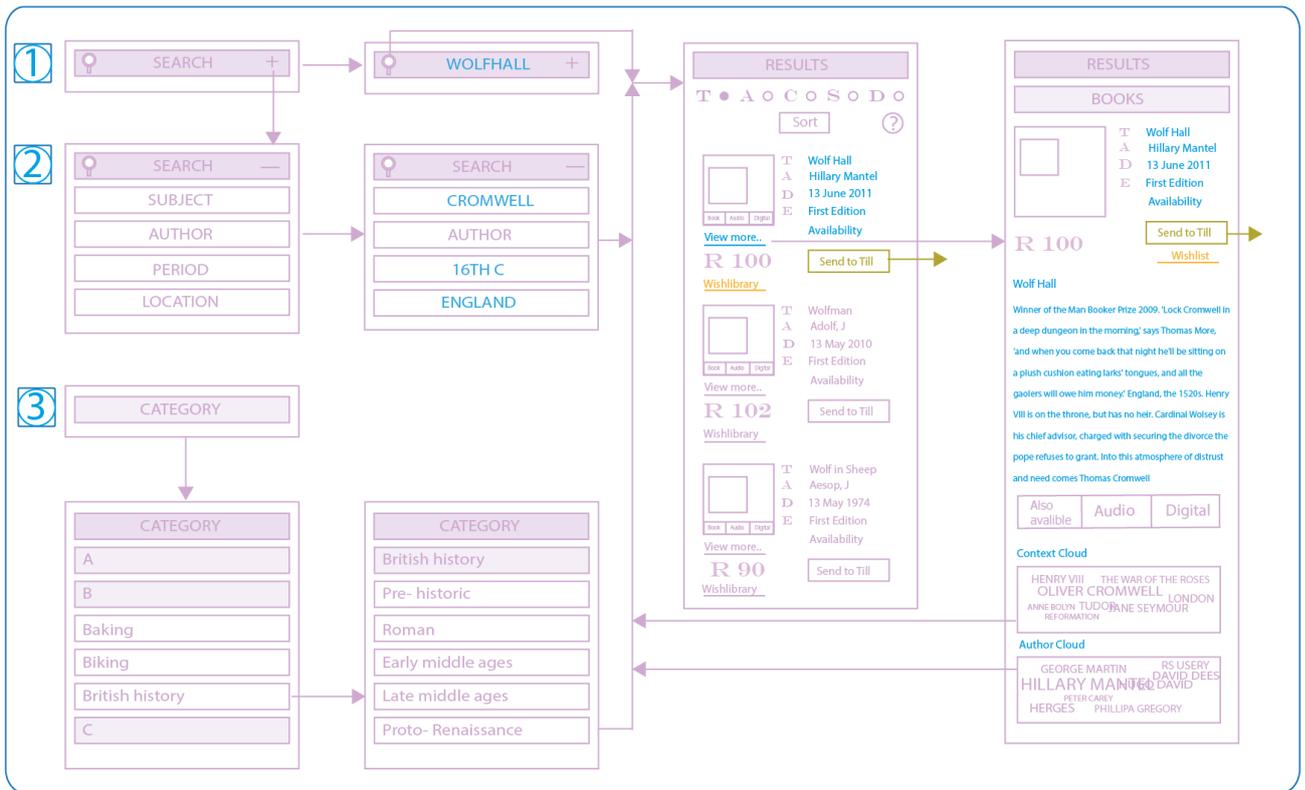


Figure 2: Examples of wireframes for a mobile phone 'bookstore' application. These wireframes depict three different approaches to finding a selected title.

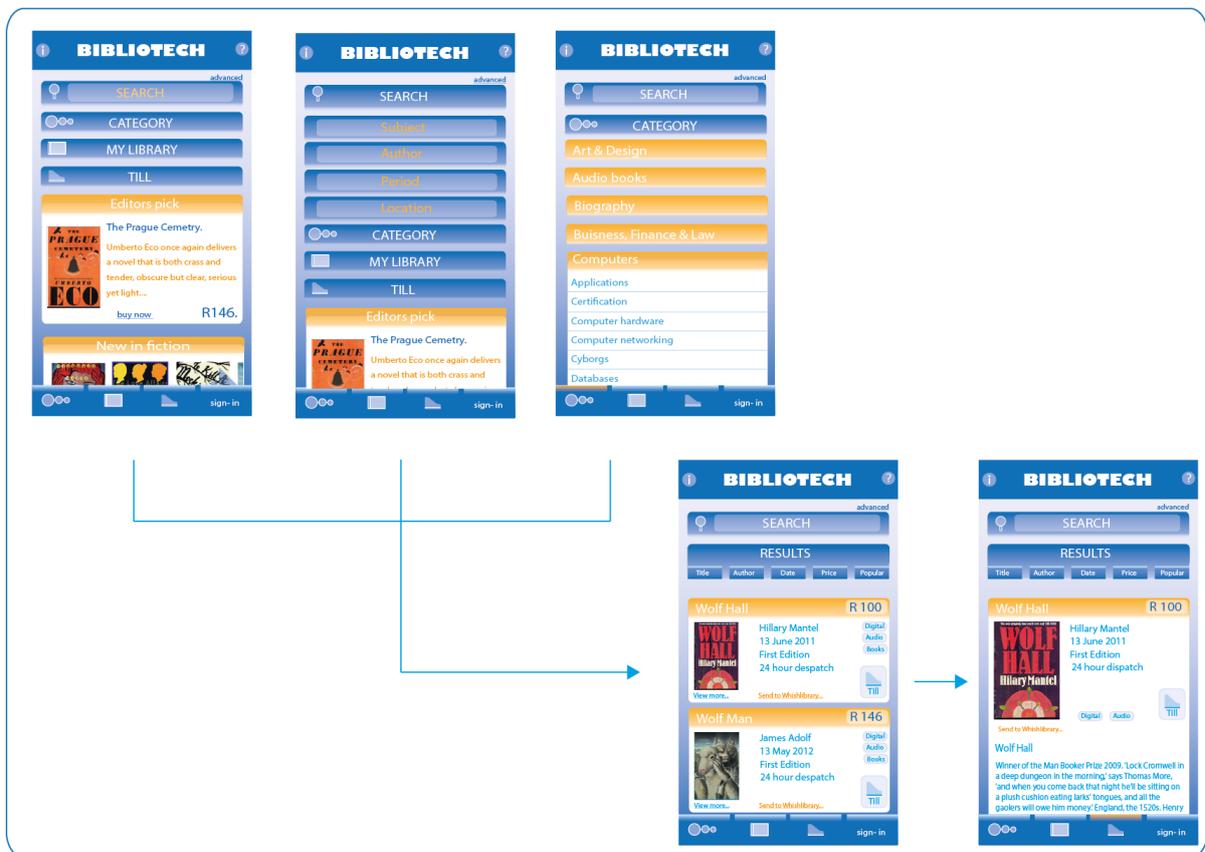


Figure 3: An example showing a 'paper prototype' version of the same application shown in Figure 2.

As exemplified in Figures 1 and 2, many of the low-fidelity prototypes of IxD take the form of diagrammatic models. This can be problematic when co-designing interactive products with development community participants as they often “struggle to make abstract decisions” based on the “paper sketches” of IxD’s low-fidelity diagrams (Marsden, G in, Rogers et al 2012: 453, Molapo and Marsden 2012: 2). Compounding these problems further community participants can often have little comprehension of the malleability and affordances of digital products. Thus digital prototypes are often not capable of generating the dialogue needed to drive product development (Molapo and Marsden 2012: 1). Therefore, while the need to design interactive products applicable to the contextual and life experiences of users is an acknowledged goal of IxD (Hassenzahl 2010: 43-49, Cooper 2007: 3), in execution this need can be fraught with difficulties.

In *Technology as Experience*, Wright and McCarthy (2004: 18) position Mikhail Bakhtin’s dialogical theory of ‘creative understanding’ as an important component of co-designing interactive technologies. Creative understanding is described as a dialogical communication process “of bringing together different perspectives and, in this creative bringing together, forging understanding” (ibid). In creative understanding all participants involved in the act of communication are seen as “mutual, present, and responsive to each other” (ibid). In this sense, the act of understanding in a dialogical approach is centered on creating a new shared meaning between those involved in the dialogue rather than a transfer of understanding from ‘speaker’ to ‘listener’ or alternatively ‘designer’ to ‘user’.

While the use of prototypes in the traditional sense can also be considered instrumental in the act of creative understanding, Wright and McCarthy position storytelling and narrative as central to dialogical understanding in design (Wright and McCarthy 2010: 28) and thus an alternative to traditional prototypes. Storytelling is identified as valuable in generating shared understandings as it involves not only the teller’s account and their consideration for the listener’s point of view but the listener point of view as well (ibid). Thus a central argument of this paper is that a dialogical approach to creating understanding is particularly useful approach in interaction design particularly when co-designing with communities where traditional prototypes may not aid decision-making.

In the remainder of this paper the role of three design methods that embed dialogical practice namely Generative tools, Personas and User-journeys will be discussed in reference to an ongoing co-design project involving the author and small-scale urban farmers in Soweto, South Africa. The final aim of the co-design project is the design of a mobile web application that facilitates the farmers accessibility to information so that they may better ensure the economic sustainability of their emerging farming businesses against the threats of commercial competition, poor resources and knowledge, and community apathy.

Generative Tools

Generative Tools are the main mode of design research in the co-design methodology of Contextmapping. Contextmapping was developed at the Department of Industrial Design at Delft University, Netherlands in the early 2000s (Visser et al 2005, Stappers 2010, Sanders 2000). Contextmapping techniques have been successfully applied across numerous domains (Stappers 2009: 7) in order to explore the “hidden world of user experiences” in order to build a better understanding of experience.

Although the main focus of the discussion will be on the use of Generative Tools to elicit user insights through storytelling and the corresponding storytelling involved when the designer presents and discusses their mapping of the user contexts in the form of Personas and User-journeys, for the purpose of flow and contextualization this discussion will be orientated by the various stages of the Contextmapping methodology. The Contextmapping methodology consists of six phases (Visser et al 2005: 5, Stappers 2010: 7) namely *Preparation*, *Sensitization*, *Sessions*, *Analyses*, *Communication* and the *Development of new concepts*. However the focus of this discussion primarily involves the *Sessions*, *Analyses*, and *Communication* phases. The other phases will be discussed briefly and only to the point of contextualizing the main discussion.

The **Preparation phase** involves the formulation of research goals, preliminary mapping, selecting participants and choosing techniques.

The **Sensitization phase** involves the preparing of participants for the co-design groups sessions. Sensitizing is a process where participants are encouraged and motivated to think, reflect and explore aspects of their own personal context, independently of the group. This process normally takes the form of an exercise pack given to the participants prior to the group sessions.

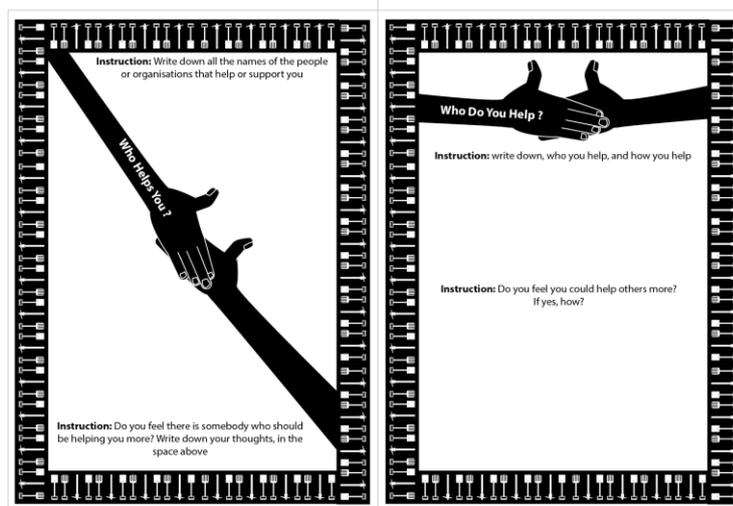


Figure 4. An example of 2 pages of an 11 page Sensitization pack used in the Soweto farmers project.

The **Sessions phase** involves conducting co-design group workshops. It is in the Contextmapping workshops that Generative Tools are applied to elicit participants' current and potential future experiences. In these workshops the participants assume the role of experiential experts and are provided with creative materials to enable them to "play an active role in requirements setting, idea generation, and even concept development" (Stappers and Visser 2007: 1).

Generative tools (Visser et al 2005: 4, Sanders 2000: 10, 2) are creative techniques such as collages, sketching and modeling that are normally used by professional designers to ideate. When applied as Generative tools, these techniques are used by the community participants to 'design' artefacts that reflect the participants' ideas for solving an, often fictional, problem presented to them by the facilitator-designer. The design activities are constructed so as to encourage imaginative, 'what if' thinking rather than responding to the constraints of 'what is' rationally possible.

The purpose of the fictional design project is not premised on the creation of a professional design product or concept but rather to help the facilitator-designer elicit insights about the participant's motivations, experiences and needs. While these insights can be derived from the made artefacts, they are gained predominantly from dialogue between the facilitator-designer and participants during and after the design activity. The logic behind generative tools is that experiences are often determined by latent needs or tacit knowledge, which are often difficult to directly express verbally (Visser et al 2005: 4).

In the Soweto farmers workshop two different design activities that utilised Generative Tools took place. The first activity involved the creation of a collage poster and the second activity involved clay modeling.



Figure 5. Task reminder for the first Generative tools activity

In the first activity, the farmers were asked to cut out images from a range of magazines in order to compile an illustrative account of their experience of learning to become farmers and how they continue to learn to be better farmers. Figure 5 shows the task-reminder that was given to the participants to help focus their activities. Figures 6a- 7a are examples of three of the collages that the participants constructed.



Figure 6a. An example of collage made by participants from Soweto Farmers session, using the generative tools methodology.

explanation	agriculture at school	origin
of	wanted to be a nurse	origin
how	courses in marketing	origin
she learned	school governingbody chairman	origin
the value	maintaing school property-	value
of farming	agriculture seen as poor persons job	info need
	permaculture course	learning behaviour
	hard work	
	compost	info need
	pesticides	info need
	work with people to gain experience	learning behaviour
	cellphones	learning behaviour
	google	learning behaviour
	don't understand google explanation	learning behaviour
	familiar with peoples eating habits	learning behaviour
	look in shops	learning behaviour
	ask other food sellers	learning behaviour
	tv programs	learning behaviour
	climate/weather	info need
	government support	info need
insects	pests	info need
fence	security	info need
	reaching customers	info need
pretty girl	healthy food	value
sick man	avoid illness	value
Ship	be your own boss	aspiration
	make money	value

Figure 6b. The corresponding data captured from the participants description of the collage in Figure 6A



Figure 7a. An example of collage made by participants from Soweto Farmers session, using the generative tools methodology.

beans	interest started with science	origin of interest
	enjoyed visiting gardens	origin of interest
	how science can control plants	origin of interest
	healthy food	value
	medicinal value	value
	food security	value
	needs to be involved to ensure food security	origin of interest
guy with suit	be succesful in business	aspiration
	priority food for people	aspiration
couple on the internet	need information generally to be a good farmer	info need
	when to plant etc	info need
	learned about agriculture from a friend	learning behaviour
	deep learning via the internet	learning behaviour
	internet easy to access	learning behaviour
Food on the plate	good healthy food should be for everyone	aspiration
	learn from other farmers	learning behaviour
	learn from old ladies	learning behaviour
	learn through talking	learning behaviour

Figure 7b. The corresponding data captured from the participants description of the collage in Figure 7A

Once the participants had finished their collages, they were asked to verbally discuss their designs in relation to their journey and experiences of learning to be a farmer. The discussions on average were 15-minutes long and involved questions and open conversation around specific points. Discussions were recorded and filmed. In general the farmer's discussions were rich in detail and provided a great deal of relevant, qualitative information pertaining to their experiences.

The value of the oral discussion was particularly useful in the example shown in Figure 6. The participant, who constructed the collage, began by talking about the value of farming rather than about her experience learning to be a farmer². However the open dialogue format that accompanied the discussions made it quite easy for the conversation to be refocused on the task of how the participant came to learn that those things were important.

In the second activity, the participants were given clay and ceramic modeling tools and asked to create a fictional tool for farming. Similar to the first activity, participants were then tasked with explaining what they had created and why they felt their creation would be useful to them in their farming activities. Below in **Figure 9** is an example of a 'robot helper' that contains a networked tablet as well as changeable robotic arms to assist in physically difficult work.



Figure 9: An example of a clay model made by participants from Soweto Farmers session, using the generative tools methodology.

In general participants responded well to the exercises although many at first considered the task to be “for children”. Once the discussions of artefacts begun they become very engaged and often the role of the facilitator was to only to redirect or end the conversation. Having the designed artefacts as the focal point of the conversation did allow for insights to emerge in real time that became critical to the authors understanding of the farmer’s needs. For example, in the second exercise many of the farmers modeled farm equipment such as mulchers³, tractors, water purification systems, robotic arms etc. At first these items seemed to offer very little relation to a possible interaction design solution however it soon became apparent that what was been described was the farmers need to expand production and farm more smartly utilizing semi- industrial methods and smarter business practice. This became a highly informative insight that orientated much of the later design strategy.

Analysis of user data

In the **Analysis phase** of Contextmapping, the qualitative data collected from the artefacts and verbal narratives is analysed, discussed and organised around key insights. In the Soweto Farmers example, data obtained from the audio recording of the discussions (as depicted in all the ‘B’ Excel-sheet diagrams presented earlier with the corresponding designed artefacts), was organised into thematic categories such as the information needs and the information seeking behaviors of the farmers.

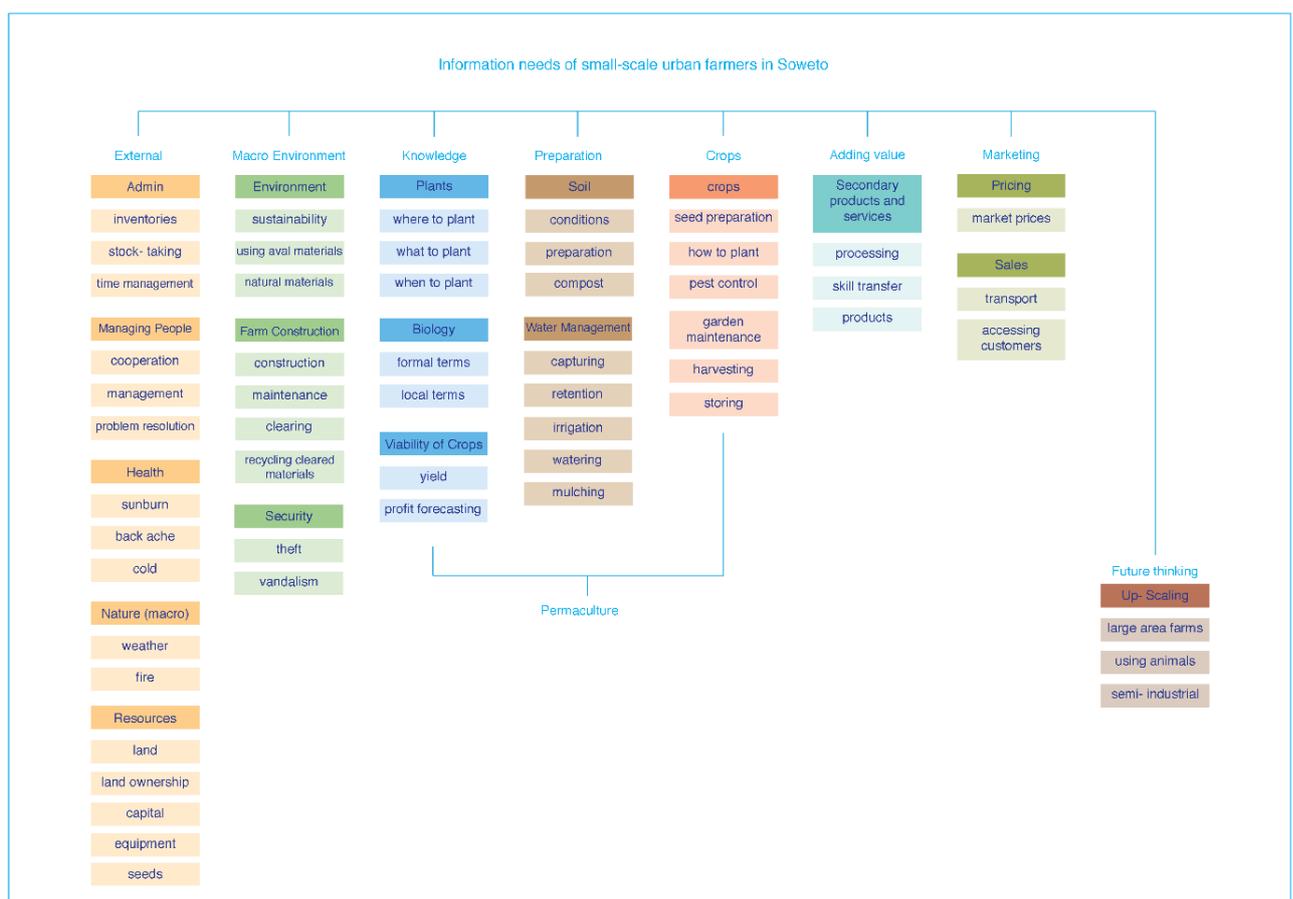


Figure 10: Schematic representation of the farmers’ information needs

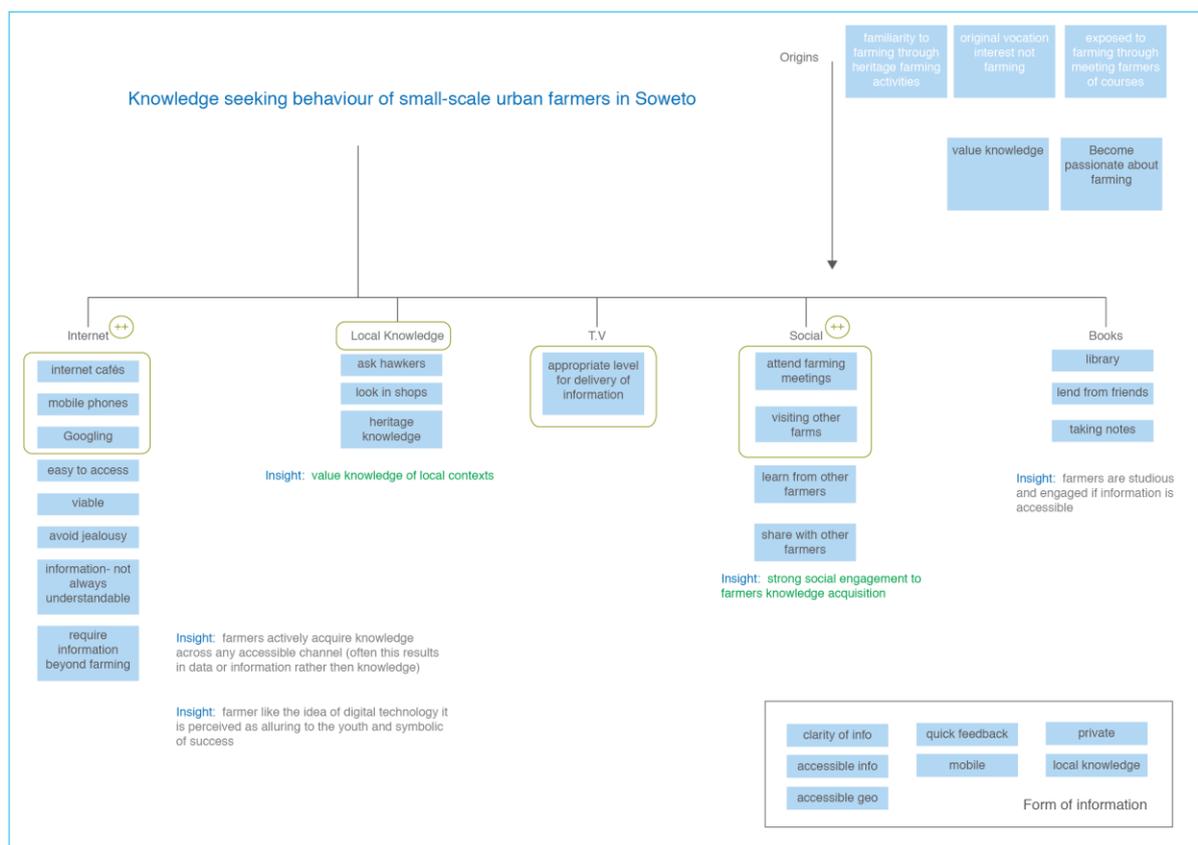


Figure 11: Schematic representation of the farmers' information seeking behaviours.

Persona diagrams and User-journeys

The **Communication phase** of Contextmapping requires the designer to present their articulation of the users experiences, resulting from the analysis, to the design team in a visual mapping. In an orthodox Contextmapping project the design team, to whom the mapping is presented, is made up of other professional designers. However in the Soweto farmers project a decision was made that due to the vast differences in life experience between the designer and the community participants, to present the mapping back to the farmers so that they could assess the validity of the mapping.

In the Soweto farmers project the mapping of the farmers' contexts culminated in two key methods of mapping, Persona diagrams (Cooper 2007: 77, Rogers et al 2012: 360) and User-journey diagrams (Caddick and Cable 2011: 79, Hobbs and Fenn and 2013: 191, Samolonis 2007: 435). These methods were selected specifically as they utilise fictional narrative as a primary tool for communicating user contexts and needs (Personas) and design solution concepts (User-journeys). Both these methods allow for the designer to represent their understanding of the users' context in a way that is story driven and thus capable of communicating intent to non- designers while still maintaining a rigor and validity due the strong emphasis on data driven insights obtained from the research data.

For example in the Personas shown in Figures 13A and 14A the background story of the three different users types, the novice farmer (Nomsa), the experienced farmer (Sithole) and the agriculture trainer (Morena) communicates a fictionalised account of the farmers contexts. While fictional in the sense that none of the Personas described here are real people, the information presented is directly connected to the origin stories described by the farmers, when they presented their collages. Similarly, the user journeys depicted in 13B and 14B use the narrative device of the relevant persona's

journey towards their intended goal (becoming a farmer, growing a business, passing on knowledge). While none of the farmers had experienced those identical goals the journeys were composites of all the farmers attempts, aspirations and successes in terms of those goals.

Using what was familiar to the farmers, channeled through the fictional characters in a narrative form, allowed the farmers to engage with the problem contexts in meaningful way and provide clear and purposeful feedback about the accuracy of the mapping.

From the participants' feedback related to the Personas and journeys, it appeared that the participants could begin to conceive how the final interactive application may work, who would use it and how it would be used. One example of the participant's level of engagement was the discussion of appropriate level of English that should be used in the description of the agricultural information on the application, which were made in reference to what type of farmer, the participants thought, was more likely to use the application. Another example was the discussion related to the different needs of Nomsa and Sithole. One participant commented that he thought that it was important that different types of farmers (novices and experienced) could use the app for different goals. Specifically, he thought it was valuable that "One could go to something that's relevant to him, rather than starting at the bottom [of the learning process].... when he just needs the other stuff". While there were numerous examples of the ability of the user journeys to communicate the intention of the design solution perhaps the most definitive was in the concluding exercise of the day. In this exercise the participants were asked to rate discrete modules of functionality taken from the various journeys such as a 'community notifications', a 'classified section' management knowledge', etc. The farmers completed this task effectively with very little discussion or questioning of concepts. This understanding implied that they were quiet comfortable assessing the value of the functions in terms of their personal needs and were not constrained by a lack of understanding related to the definitions of the terms or the contexts in which the terms would be applied.

The final value of using Personas and User-journeys is that they are widely used design tools in interaction design for the articulation of design concepts. They are thus, when constructed well, important communicators of design decision-making within the field and can help to bridge the gap between users experience and actionable design product. This aspect is the focus of the last phase of Contextmapping, the **Development of new design concepts** within which the scope of practice returns to the 'disciplinary' design practice.

From the discussion presented in the preceding description of Contextmapping and the Soweto Farmers project, three key concepts emerge. Firstly, Generative Tools are capable of providing to the designer a rich account of the experiences and contexts of users in a manner that allows for analytical exploration and subsequent synthetic recreation and articulation. Secondly, Personas and User-journeys both of which articulate concepts using dialogical techniques are capable of communicating designers' synthesis of users experiences, contexts as well as related design solutions in visual forms that are potentially easier to understand by community participants than other low-fi prototypes typically used in IxD. Lastly, when used in the same design process Generative Tools, Personas and User-journeys can be viewed as an integrated and systematic continuum as these methods in essence form a reciprocal relationship with each other.

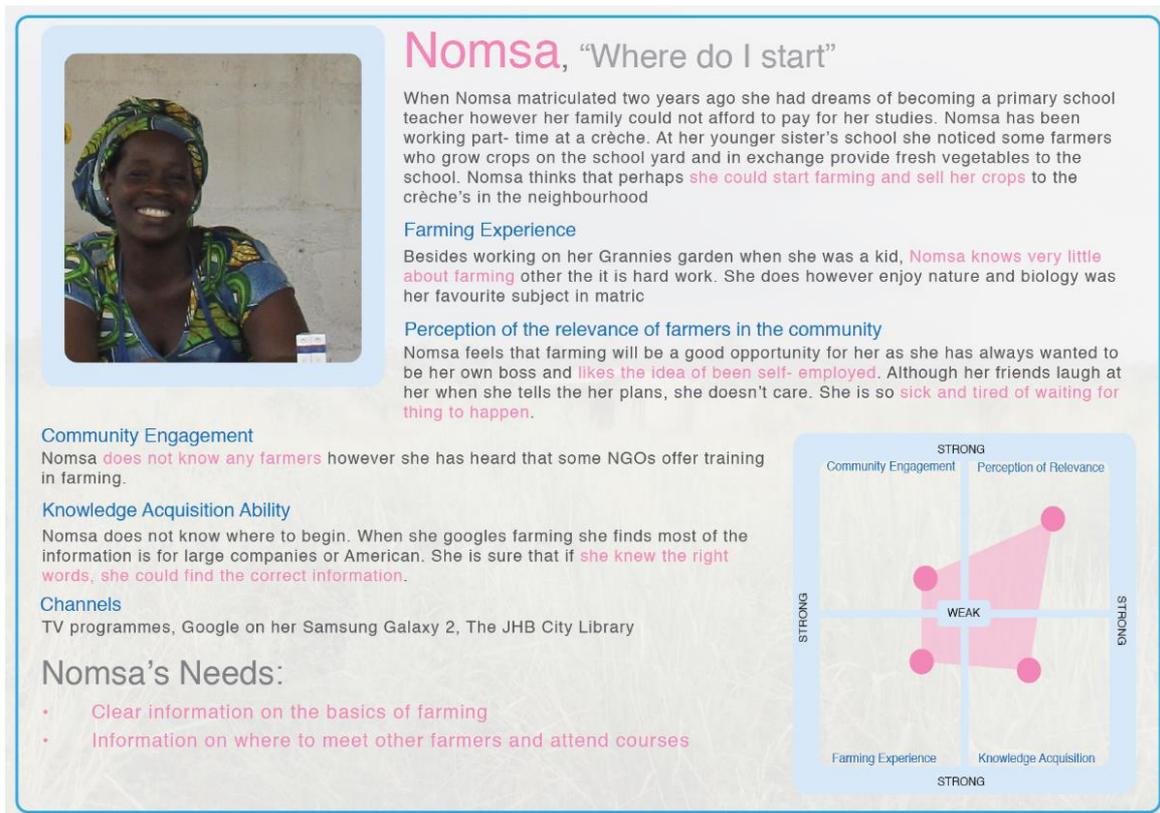


Figure 13a. The persona for the fictional character of Nomsa

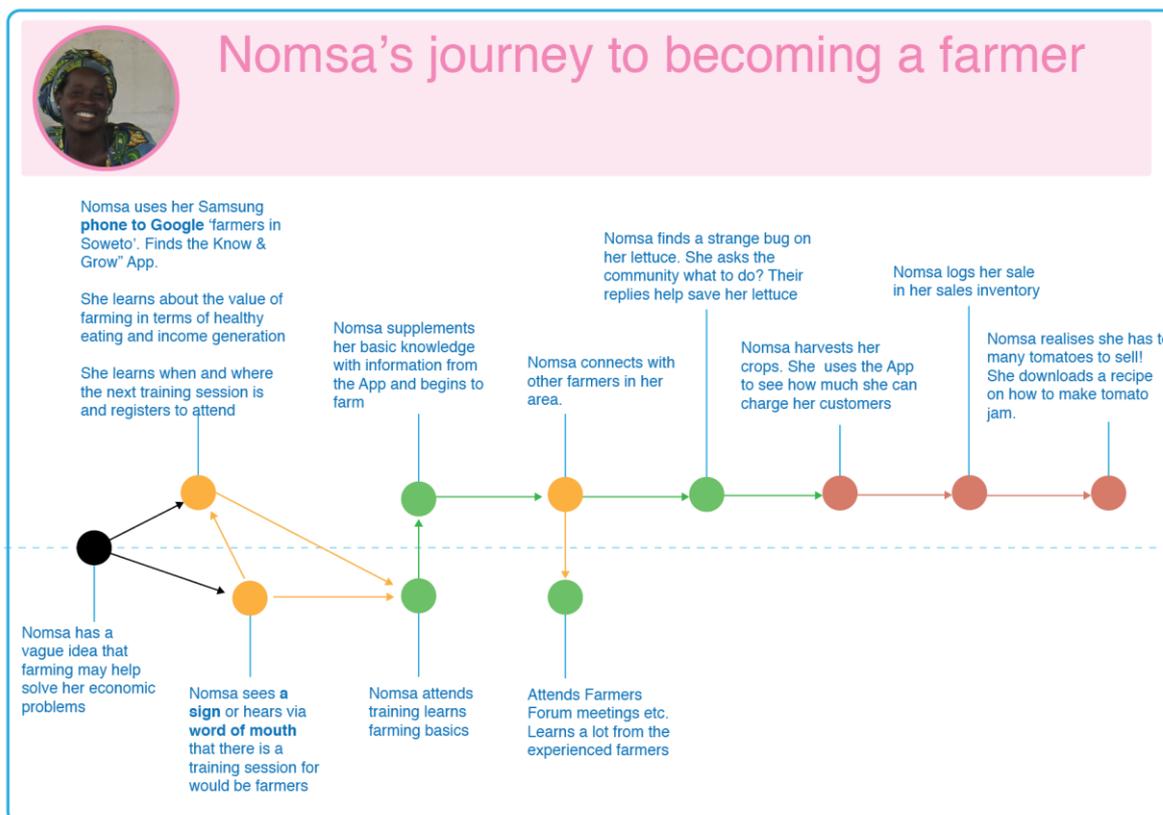


Figure 13b. Nomsa's journey towards becoming a novice farmer.

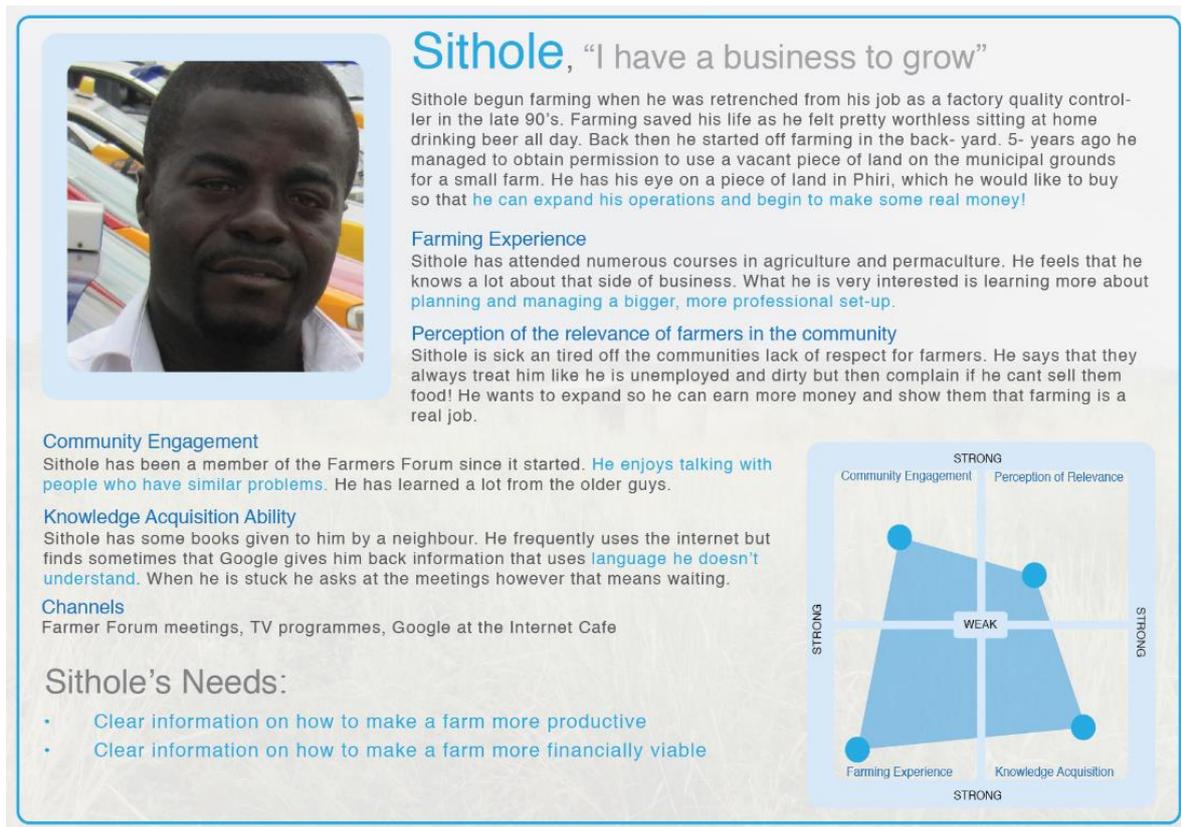


Figure 14a. The persona for the fictional character of Sithole

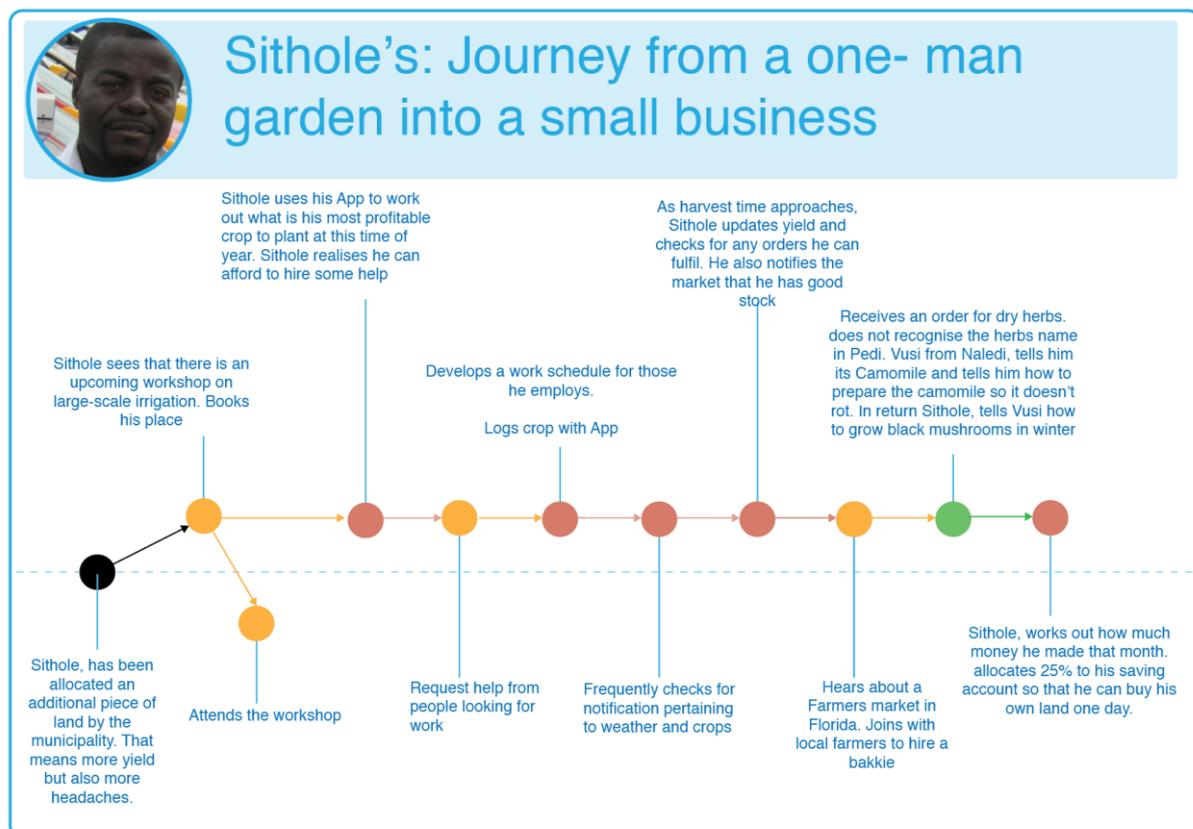


Figure 14b. Sithole's journey towards becoming a more business orientated farmer.

Conclusion

While the value of digital interactive products in improving people lives is well established, the design of such products even within participatory, human-centered approaches can be problematic owing often to community participants lack of familiarity with the affordance of digital technologies. To this point this paper firstly, introduces Wright and McCarthy positioning of narrative as a facilitator of shared understanding as an alternative to the traditional interaction design prototype. The paper then proceeds to describe how the design methods of Generative tools, Personas and User-journey diagrams support the generation of shared understanding between the designer and community participants. This discussion is illustrated by referring to an application of these methods in a recent co- design project involving small- scale independent farmers in Soweto.

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Endnotes

¹ It is acknowledged that the term 'developing communities' is problematic however it is used here to refer to communities that lack the infrastructure and resources of a 'normative' urban environment.

² It was assumed by the author, that the participant's reason for articulating the grand narratives of permaculture was due to her experience of frequently attending workshops run by NGO where those issues are stressed

³ Mulch is small shavings of wood spread over soil to increase water retention. A mulcher is a machine that shaves the wood.

A TRANSDISCIPLINARY RESEARCH APPROACH: CHALLENGES AND BENEFITS OF CO-PRODUCTION

Helena Hansson

University of Gothenburg

Franklin Mwangi

Maseno University

Jennifer Otieno

Maseno University

Maria Nyström

University of Gothenburg/Chalmers University of Technology

Abstract

Problems concerning Sustainable Urban Development are complex and can no longer be dealt only within pre-existing disciplines and structures for planning and decision-making. (Mistra Urban Futures (MUF) Handbook 2013) "A key characteristic of scientific approaches that focus on contributing to sustainability is participation. In the scientific sphere, this includes the integration of different types of scientific and non-scientific knowledge. One of the most popular concepts used to refer to this type of participatory work is transdisciplinary research". (Polk 2014). Research projects based on joint-knowledge production are unusual, and there are few real templates to follow. (MUF Handbook 2013) This paper describes a case study, connected to the MUF interactive platform in Kisumu¹. The research students describe and reflect on the situation to understand what challenges and opportunities a transdisciplinary approach gives to the over-all process. It aims to produce outcomes that can be further implemented and support researchers working in practice based transdisciplinary projects.

Initial Findings:

- Complexity takes time and requires an open mind-set and ability to work with multiple framings.*
- Trust-building ability is a key - to be present, transparent and build dialogues*
- A Shared ownership of the process is necessary*
- Prototyping and establishing a Shared Digital Working Space with Easy Access are a useful co-creative method to implement knowledge*
- Reflection and Facilitation is needed to support and deepen the collaborative working process.*

Keywords: *Transdisciplinary research approaches, co-creation, marketplaces, prototyping, systems design, challenges.*

Introduction

Transdisciplinary research aims to produce socially robust results that "contribute to sustainability

through in-depth participation of stakeholders and the integration of relevant knowledge from both practice and research in real-world problem contexts. The actions should lead to increased participation, knowledge integration, social robustness and contributions to sustainability." (Polk 2014)

There have been similar approaches under different names such as post-normal science (Funtowitz and Ravetz 1993), Mode 2 (Gibbons et al 1993, Nyström 2002, Nowotny et al 2001), issue-driven interdisciplinarity (Robinson 2008), interactive social research (Talwar et al 2011), and transformative or participatory sustainability science (Blackstock and Carter 2007, Lang et al 2012, Spangenberg 2011, Wiek et al 2011). All share a focus on "*bridging the gap between science and practice to more effectively use science to capture and solve current social and environmental problems*" (Robinson 2008, Polk 2014).

Challenges of Transdisciplinary Research

Research projects based on joint-knowledge production are unusual, and there are no real templates to follow. One "user manual" is MUF's "*Manual of Joint Knowledge Production for Urban Change*" (2013) based on five research cases from Sweden. Referring to the manual the challenges are related to the knowledge production process, with multiple actor involvement including both academic disciplines and practitioners. The issues are related to multiple framings, knowledge diversity and challenges of how to create co-owned arenas for transformation processes (MUF Handbook 2013). Working in a global transdisciplinary research project between Kenya and Sweden, with more than 150 participants, adds further complexities: distance and different societal and academic cultures.

Methodology

Introduction

This paper focuses on a case where three research students, from different academic backgrounds connected to MUF interactive platform in Kisumu, work with the common objective to: "*empower local livelihoods through sustainable marketplaces and ecotourism development using a transparent, transdisciplinary, and system-based approach by stakeholder participation*" (KLIP Core group Objectives). Dunga Beach, a fishing community outside Kisumu act as the common case (see illustration1). The researchers share the same space but are looking at different problems. The aim is to integrate and extend beyond discipline-specific concepts, approaches, and methods to accelerate innovations and progress toward solving complex problems affecting Marketplaces in Kisumu. The study enables collaboration in information gathering and dynamic analysis to integrate crafts, livelihoods, energy and design in a market system. The knowledge is prototyped and implemented for direct feedback from the local community. The common approach used by the researchers, is aimed to connect academia, business sector and the end user. *Dynamic Systems Design* is one of the common languages for design utilizing analytical and intuitive approaches to formulate questions, gathering information and analysing. Incorporating the language and approach of system analysis can help create a holistic view of otherwise complex situations. It becomes a tool for communication between disciplines. Another method used is *transformation and innovation through interventions*. The interventions are made up of physical and social systems involving people in the city, buildings, objects, concepts and so-called "rules of the game" (Nyström 2002, 2005, 2010).

Researchers Framings

One of the Kenyan researchers has a background in Geographic Information Systems (GIS) and her research is on '*Market Metabolism Focusing on Omena Traders*'. She uses the concept of metabolism to analyse the flow of *Omena* through Dunga market system. *Omena* is a local fish traded by women

that is gaining recognition because of its market availability, high nutritional value, and low cost. The main objective of the research is to understand the flow of resources in a market system. The results will give inputs in developing sustainable resource use within the system. The researcher is working with individual women and women groups, other researchers on alternative livelihoods, and a local non-governmental organization working with the women to form groups of Omena traders .

The other Kenyan researcher has a background in architecture and urban design. He looks at the design process as a participatory mechanism in connecting market communities' renewable energy systems. Connectedness theory is used to study the individual's sense of connection to nature and the degree in which s/he participates in the planning and designing of renewable energy systems at the marketplace. This study aims to investigate an integrated version of sustainable building and site layout practice to develop an approach that enables the exploration of a trans-disciplinary collaboration in the provision of renewable energy technologies for large public markets.

The Swedish researcher has a background in industrial design. The study explores the "new" role of the designer operating on a global arena by using Actor-Network Theory (Latour, 2005) In the process, she act as a designer herself with the aim to support the local craft community to build capacity and thereby create livelihood opportunities. She designs "strategic objects", with a function beyond the obvious, and study how these "*supports the creation of syntagms (linkages) to build and stabilize a network of actants*" (Latour 2005) The practical result of the research, are projects where the invasive plant water hyacinth is used as a resource in handicraft production, for example in basket production and eco-tourism development.

Data Collection

The research process has been divided into five phases. The Swedish researcher mostly works from Sweden but has been in East-Africa several times during 2011-2013. The two Kenyan researchers are based in Kisumu and Nairobi, and have been visiting and studying in Sweden several times. The researchers regularly have contact via e-mail and Skype, but the most frequent interaction is made via Facebook. The researchers have set up several shared groups together with practitioners.

Results

1. Set up the Core-group - Identify the Case (Sept 2012)

The process started with the Swedish team going to Kenya to meet the research colleagues. A Core group was established with three PhDs from Sweden and four from Kenya. The Core group has a common research framework and objectives. The phase also included identifying a research case, which could link all the researchers work together. The identified societal needs were primarily alternative sources of livelihood and market access.

Reflections and Learning Outcomes

It was a challenge to set up the joint work because of multiple framing within the group. Areas of interest are different, and the different academic traditions. Team building activities is core to identify roles and abilities and, external facilitation would have supported this process.

2. Data Collection through Participatory Activities (Nov 2012)

The Swedish team arrived to Kisumu to start the research work with the community through field studies and data collection using participatory interventions and observations. The participatory activities involved about 100 community participants. These activities were complemented with

individual observations, interventions and semi-formal interviews to establish relations and get an understanding of the place.

Reflection and Learning Outcome

Some Kenyan students were occupied in full-time teaching, and it was difficult to gather the full group to enable cooperation. The researchers were in different stages of their process and with different academic traditions in the group, and it was a challenge to find common methods of data collection relevant for everybody. The design interventions that included several workshops, was a challenge to organize. More community members than expected were participating, and they arrived at different times. Language was a challenge since not all of the participants could speak English, and had difficulties in reading and writing.

Instead of big community gatherings, an alternative way to collect data could be to spend time on site observing or shadowing the stakeholders. Research students could have worked in pairs using systems mapping as a co-creative tool to make the system dynamics visible. A small co-creative intervention like the playground workshop described below, can be a way to “get everyone on-board”. Reflexive discussions in smaller groups on why and how to do participatory work could be a start to build common understanding.

The identification of demand driven needs within the community plays a crucial role as a starting point for researchers. To avoid repetition, the researchers must reinforce and develop existing initiatives and potentials.

3. Formulation of a Common Proposal (Jan 2013)

The group formulated a common project proposal aiming to connect the three individual projects. The concept of using water hyacinths as a resource for the community, acted as a link between the different projects. The proposal was sent to the community by e-mail, but little feedback was received.

Reflection and Learning Outcomes

There was a challenge in framing because of the three levels to handle: The individual research level, the Marketplace research level and the Core group research level (see figure 2).

Co-production of a common project proposal together with community on site would probably be a better way to create an inclusive process with shared ownership. Here systems dynamics mapping could have been an efficient tool, because it makes visible all components and linkages and give an overview of the interconnections.

4. Implementation through Prototyping – Participatory Activities (April-October 2013)

A playground concept was developed as a way to initiate participatory work with the community. It explored the intersection between crafts, design, play, and space through hands-on making in full scale. The first prototype was tested in Sweden and the concept was then “translated” by a Kenyan researcher to be adapted to the Kenyan context. A joint intervention was later held in Kenya where all researchers worked together with the community on site (see figure 3). A simple rope-making machine was also introduced, which showed to be a successful tool to engage the community and show potentials of how to use waste as a resource (see figure 4.) A Facebook group was also created where the researchers and community could communicate more easily.

Reflection and Learning Outcome

A transdisciplinary research process is open, hard to predict, and includes improvisations. The researcher must be open-minded but at the same time clear on the individual aims and objectives, to be able to interact with other stakeholders. A co-creative intervention like the playground including the rope making, showed to be an efficient method to gather different actors and make visible and create awareness on the potentials, in this case alternative use of resources. The individual researcher's input was highly noticeable and the intervention naturally invited the community members as co-creators. By collaborating together through hands-on activities, the relations between the actors were strengthened. The Facebook group made it easy to share photos and chat to keep the contact alive.

5. Reflexive Analysis and Co-production of Knowledge through Writing

During a period in Sweden, the students had the opportunity to reflect on the research process so far, with supervision from several professors. They brought up issues that were hard to discuss on e-mail or Facebook. The group analysed the process to find out the next steps to take. This was done through several systems mapping sessions.

Reflections and Learning Outcomes

During this period, the students spent a lot of time together, reflecting on their work and finally they "really" started to collaborate. The common mappings showed the researchers' individual objectives, the different scales but also how the individual projects were linked (see figure 5). The mapping indicated possible directions for future collaborative work. A potential of establishing entrepreneurship training, integrating crafts production, ecotourism and energy production, was identified. The mapping activity built links and trust between the researchers.

Discussion and Conclusion

What are the challenges and opportunities of using a transdisciplinary approach? What are the outcomes? This research work, encompassing PhD researchers from two continents, demands a collaboration aiming for long-term implementation. The process is full of challenges, but gives new insights and perspectives to the individual work. Co-creation of knowledge has been a new approach to the researchers coming from different scientific and creative disciplines, and hence challenging in consolidating a common platform. To be able to produce new relevant knowledge, the process requires methods, collaborative tools and skills to reach a common understanding.

Complexity Takes Time

The study shows that a transdisciplinary approach is complex because of its multiple framings due to multiple stakeholder involvement. Frequent dialogue was identified as one of the key tools on co-creation, which requires time and perseverance.

Open Mind-set - Frame and Re-frame

The co-production process requires an open mind-set where you constantly need to frame and re-frame the scope. Each actor should be clear on their individual aims and objectives to enable sustainable integration with other actors. Co-writing a shared project proposal based on systems mapping is a useful co-creative method, since it make dynamics visible.

Building Trust

Longer field studies and spending time together is important for the research team to have a common understanding for reading and learning from each other.

The creation of a dialogue with local actors and residents early and also to report back to the community is crucial. Building trust is a precondition to reach the inhabitants and the tacit knowledge.

Shared Ownership - Build a Common Ground

All actors involved must agree on what it is and how to work. It must be a shared ownership between the practitioners and the researchers, for example, the community plays an important role in the process of problem identification because they are “the professionals”.

Prototyping - a Co-creative Method

Physical prototyping and hands-on collaboration showed to be successful ways to co-produce knowledge, since knowledge became visible for everyone involved and was easy to build upon.

A Shared Digital Working Space

A common digital platform is important when different actors working “on remote” are involved. Facebook, for example, is easily accessible to many stakeholders and make visible information. This should be complemented with a physical space on site, where as much information as possible is shared.

Reflection and Facilitation

The complex process of co-producing knowledge requires external facilitation and time for collaborative reflections.



Figure 1. Daily life in Dunga Beach. Photo: Helena Hansson

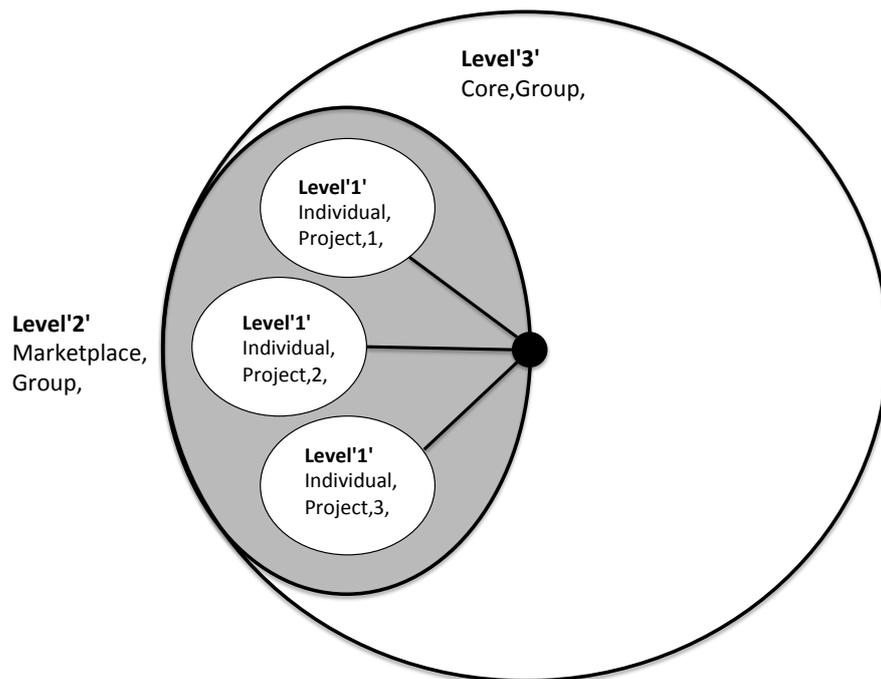


Figure 2: Model showing the multiple framings for KLIP Core group. Illustration: Helena Hansson



Figure 3. Prototyping: A Playground intervention as a co-creative method to make visible potentials and “make people come together”. Photo: Helena Hansson



Figure 4. Prototyping: Rope making intervention in Dunga Beach – a co-creative method to make visible potentials. Photo: Helena Hansson

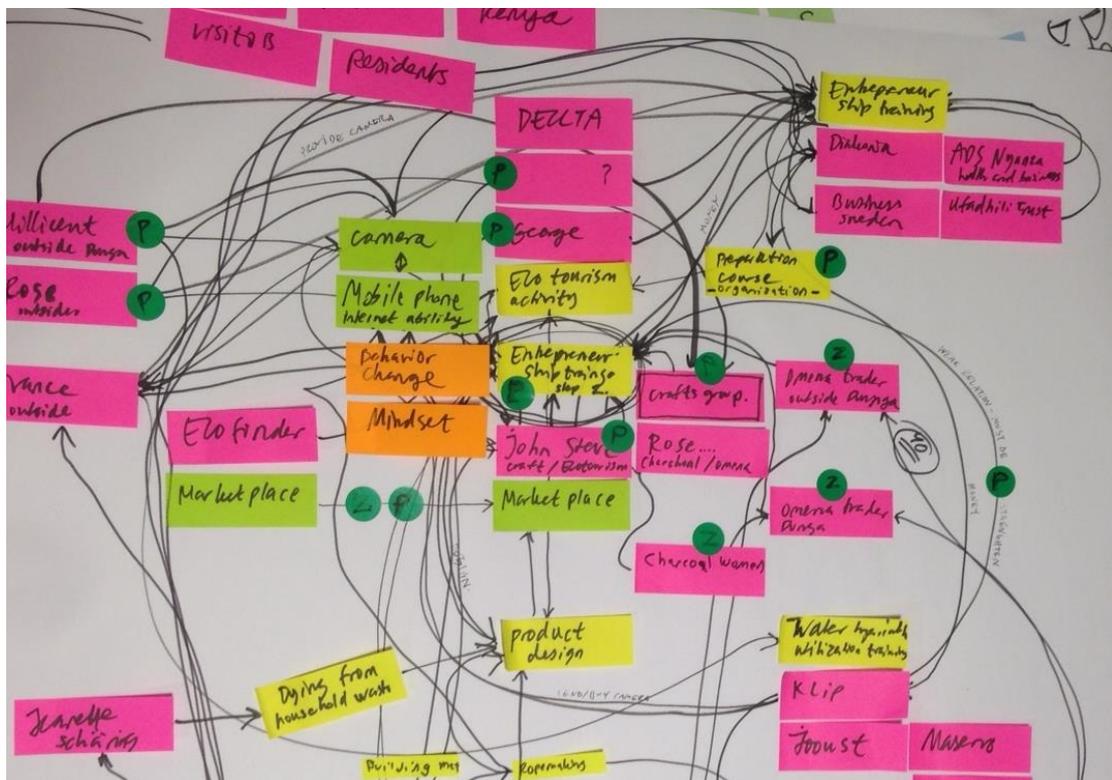


Figure 5. Systems mapping as a co-creative method to identify potentials and challenges. Photo: Helena Hansson

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Endnotes

¹ *Local Interactive Platforms (LIPs) exist in Kisumu, Shanghai, Cape Town, Manchester and Gothenburg where the head office is located. The platform, KLIP, in Kisumu consists of a consortium representing two universities, Maseno and Jaramogi Oginga Odinga University of Science & Technology (JOOUST), the society and business (Triple Helix). Two research flagship projects are run namely Eco-Tourism (ET) and Marketplaces (MP). Twenty doctoral students, a number of post docs, professors and master students are involved in the general research. To be able to handle so many PhD students a Core Group of seven PhD students from Sweden and Kenya was created. The Core group is divided into two groups: Eco-tourism (ET) and Marketplaces (MP). The two themes are overlapping, but at the same time two separate research areas. The Core Group has some common activities with the other doctoral students; however this paper is a contribution from the marketplace Core Group.*

SOCIAL COOPERATIVES MODEL OF DEVELOPMENT IN THE MANUFACTURING SECTOR: LESSONS FOR SOUTH AFRICA

Keneilwe Munyai

University of Johannesburg

Mugendi K. M'Rithaa

Cape Peninsula University of Technology

Abstract

South Africa is in the process of driving vigorous economic development informed by the need for government to ensure that a country that is endowed with resources create empowerment opportunities that will ensure greater socio-economic participation among the general populace. The country is facing unusually high unemployment rates with the local manufacturing sector being unable to absorb them. The manufacturing sector typically relies on large-scale manufacturing, which often has challenges in adapting to new regulations and the necessary environmental regulations. Under the theme of sustainability, this paper explores the model of social cooperatives in Italy with a focus on the manufacturing of goods for sustainable economic development. Italian cooperatives use a decentralised strategy and create distributed flexible manufacturing networks that focus on environmental issues, economic development and social empowerment. The cooperatives are a user-owned, user controlled business that distributes its benefits based on use – these cooperatives combine three fundamental principles, which are ownership, user control, and distribution of net income based on patronage rather than investment. Flexible manufacturing SMEs systems are able to leverage niche markets created by the volatile global markets whilst contributing to the economic empowerment of many. They also use democratic processes to ensure economic participation from marginalised segments of society through social innovation. Social innovation is at the heart of cooperative success. To this end, social engenders a deliberate change of mind set and the way we view our role in society and how designers contribute to the behavioural change. This paper explores the role manufacturing social cooperatives in the process of economic development, social empowerment and social cohesion. Qualitative research strategies are used for data collection and analysis based on data collected in Italy, specifically in Forli (a hub of social cooperatives). Interviews were also held with participating social entrepreneurs involved in the cooperatives since their inception.

Keywords: *Decentralised production systems; economic development; social cooperatives; social innovation; sustainability.*

Introduction

An open political environment which allows people to think freely, open access to information and freedom to express views while also cultivating their willingness to take risks are important factors in the process of establishing sustainable SME cooperatives. The cooperatives comprise of highly skilled, semi-skilled and no skill work force – cooperatives are thus proficient at fostering critical

relationships through the collective problem-solving culture of democratic economic participation by those who belong to such networks. In this context, cooperatives are a key driver of economic development through mobilising local resources into a critical mass that allows them to be genuinely community oriented. There are many challenges that face world economy; the cooperative sector has the ability to contribute to solving some of the problems. In this paper we examine the potential of manufacturing cooperatives in relation alternative to manufacturing goods while contributing to job creation and addressing inequality. This paper advances the dialogue on the importance of cooperatives in societies that are plagued by issues of corruption to give power to communities. Cooperatives are a user-owned, user-controlled business that distributes its benefits based on use. The cooperatives combine three necessary principles, which are ownership, user control, and distribution of net income based on patronage rather than investment. There is no doubt that decentralised flexible manufacturing SMEs systems are able to leverage niche markets created by the volatile global markets while contributing to the economic empowerment of many. This paper further argues that such SMEs contribute towards more robust and resilient micro- and macro-economic dynamics.

The South African government through the department of trade and industry (DTI) has recognised the potential of cooperatives in economic development, job creation and community empowerment. The strategy through the Industrial Policy Action Plan (IPAP) government plans to ensure streamlining of support measures for cooperatives (DTI, 2012). There are several national policy frameworks that seek to promote and support the development of cooperatives. However, the following challenges are faced by cooperatives, lack of critical skills amongst cooperative members, limited cooperation amongst cooperatives, limited access to finance, lack of compliance with legislation and lack of monitoring and evaluation of cooperatives. To deal with these challenges, the government has come up with four strategic pillars for the provision of strategic support to cooperatives though increasing the non-financial support services through the cooperative development agency. The second pillar is to create a demand for cooperative products and services. The third pillar is creating sustainability of cooperatives through business networks and business infrastructure support. The fourth pillar is to increase supply of fiscal support for cooperatives (DTI, 2012: 72-76).

Cooperatives have a long-standing tradition in South Africa, particularly amongst the black townships and rural communities based on communal trust, discipline and support. The *stokvel* system or mutual saving scheme enables community members to buy goods at wholesale price to share. The cooperatives are gaining momentum in the recycling sector and brick making. However, the success of these is mixed due to fraud and conflict (DTI, 2012).

There is currently a dearth of records on manufacturing cooperatives, particularly in the textile, leather, clothing and footwear industry which have been shedding jobs due to various challenges in the sectors. Cooperatives are viewed as a driver of economic development through mobilising local resources into a critical mass and form a structure that allows them to be community oriented. There are different types of cooperatives based on the services they provide. However, this paper will focus on the manufacturing cooperatives.

Social Innovation is at the heart of manufacturing cooperative success. Social innovation is not a government or corporate boardrooms, it is rather a change of mind set and the way we view our role in society and how designers contribute to the behavioural change. The results of social innovation are

new ideas that meet society's needs through social enterprises (Mulgan, Tucker, Ali & Sanders, 2007). Social enterprises are entrepreneurial activities with two primary objectives; to identify an inherently unjust equilibrium that causes the exclusion, marginalisation, or suffering of a segment of humanity. Secondly, to organise a direct and efficient activity to change the equilibrium for social benefit (Martin & Osberg, 2007). The social enterprises also have features of financial and managerial autonomy and democratic representation of employees (Borzaga & Defourny, 2001).

Subsequently, an open political environment which allows people to think freely, open access to information and freedom to express views also cultivate their willingness to take risks, these are also important factors in the process of establishing sustainable manufacturing cooperatives. Cooperatives are also proficient at fostering critical relationships through the collective problem solving culture of democratic economic participation by those who belong to their network. The cooperatives comprise of highly skilled, semi-skilled and no skill work force, which contribute to economic development.

Discussion

A qualitative research approach was deemed to be germane for interrogating diverse socio-economic dynamics – this included field visits and semi-structured interviews during the data gathering phase. In Italy, specifically in Emilia-Romagna region (a hub of social cooperatives), and Rome a social service cooperative model is well established. Social cooperatives in Italy are divided into *Type A* and *Type B*. Type A being social service cooperatives, which delivers 85% of social services in the Emilia-Romagna region. Many workers involved in this type of service are from disadvantaged backgrounds, living with disabilities, mental challenges, recovering drug addicts and former prisoners. Italy has the largest concentration of worker cooperatives or industrial cooperatives in Europe. These cooperatives have arguably contributed to Italy's recognition as a leader in the global design industry.



Figure 1: Italy has a large concentration of manufacturing cooperatives in Europe (Source: co-op news, 2014)

For purposes of delimitation, this study's focus is on the manufacturing cooperatives, which use innovative approaches to development and economic equality. There are currently over 90,000 manufacturing enterprises made out of small, medium enterprises in the Emilia-Romagna region. Two-thirds of the region's citizens belong to a cooperative, which contribute 45% to the GDP and economic development of many in society. There is a well-established culture of *artigianati* artisans who produce goods to sell, but also form a network of suppliers through the decentralised production system to industries such as food products, leather goods retailers, fashion goods and home ware goods (Restakis, 2000).

Decentralised flexible production systems

Decentralised production system is considered to be a form of flexible manufacturing, it represent locational flexibility and organisational flexibility (Vaithegi, 2007). Locational flexibility increases the ability of enterprises to relocate parts of their production process to different locations within countries and the world. Creation of decentralised flexible high quality production system is one of the core concepts of a holistic approach to systems design in manufacturing (Scherer & Weik, 1996).

Viable system model to achieve viable production system, which in turn allows for the designing of a decentralised production system, requires a dynamic environment. To be able to develop a holistic regulatory framework for production systems first it is important to consider operational factors such as material, services, authorisation and information flow for goods and services (Dyckhoff, 1998). Secondly, the system is a collective of elements that are related to each other.

The production system describe the element for the holistic organisation of production and define all necessary concepts, methods and tools for efficient and effective transformation process of operational factors for goods and services. The transformation processes are carried out on different levels depending on their complexity. The transformation also takes into account the environment in which the business operate, accompanied by production management which monitors the processes and interferes in case of abnormalities of all value adding processes (Schuh, 2006).

Emilia-Romagna's production model has come to represent a modern case of solidarity economy, which is connected by values of economic democracy, participatory governance, social capital and stability. Small companies working in cooperative network within the industrial districts operate within the principles of cooperative, adoption of reciprocity and mutual benefit for economic objectives, which form philosophical and social bases of the system. The small-scale production allows the individual firms to make adjustments to the product, respond to new requirements from client, or seek additional expertise. These networks apply attitude and principles of reciprocity, which closely resemble those of civil society.

Manufacturing cooperatives in context

Antoni (1937) defined worker cooperatives as established by employees for the purpose of jointly practicing their occupation for their employment. Galor (1991) asserts that the production cooperatives are considered a possible solution for development problems. The manufacturing cooperatives use flexible manufacturing networks. The networks replicate strengths of large cooperate structures in production systems that maintain scale, independence, flexibility, and innovation, on a small scale. Moreover, flexible manufacturing is a set of relationships that link small firms together in a cooperative production system (Restakis, 2000). Decentralisation is also about controlling complex systems with

multi-objective optimisation problem solving through negotiation (Amigo & Gatti, 2006). The Italian cooperatives grew stronger with economic development in recent years through the expansion of the manufacturing sector. Manufacturing cooperatives optimise economic and human development and balancing the needs for production, respect for the environment and provision of rewarding work and a stable job. The system is based on worker cooperatives that are based on democratically controlled enterprises.

The management team is accountable to the members; this makes cooperatives a more democratic system. The cooperatives also have checks and balances in place to ensure that the managers do not abuse their power through rotating members on the governing board and setting up committee watchdog and having union representatives to ensure that industry wide wage levels. Generally cooperatives are made up of small or medium size companies due to democratic participation being easier when there are fewer members.

The principles that govern the cooperative movement include the worker-controlled model with the workers participating in the decision making at all levels of the organisation. Limiting wage and salary inequality by limiting pay margins. Members of the cooperative invest money in the firm and the control of the firm goes with membership, which in turn guarantees the member the right to vote on matters that concern the business. Moreover, the profits of the business belong to the members, who may decide to use the profit to expand their business. In Italy all cooperatives are exempted from paying tax, however they are required to contribute 3% of their annual profit towards a fund that will help establish new cooperatives (Law 8 November 1991 n 381).

Worker cooperatives are non-profit organisation under the Italian tax law, and are legally bound to invest their surplus for further job creation in exchange for favourable tax status. Cooperatives are required to invest in the community, rather than shareholders and owners in favour of creating new democratic employment (Martin & Osberg, 2007). This could reduce the over reliance on government to provide financial assistance and ensures economic sustainability. Moreover, the European Commission has recognised co-operatives as an excellent example of a type of company that simultaneously address entrepreneurial and social objectives and recognises their important role as a vehicle for implementing community objectives February 2004, on the promotion of co-operative societies in Europe.

Italian law also specifies that co-operatives shall guarantee the equal treatment of their members and assign patronage refunds to members in proportion to quantity and quality of mutual exchange a fact that was verified through the interviews with the respondents. In production co-operatives, manufacturing costs of goods and services provided by members must be greater than 50% of total manufacturing costs.

Article 45 of the Italian Constitution states that cooperatives exercise sovereignty but may contribute towards social reform. The commission also acknowledge that cooperatives contribute to the development of knowledge as they act as schools of entrepreneurship and management for its members who take part in the activities (Com 2004:18, of 23).

The cooperatives focus is on providing high quality goods and services, conserving energy and protecting the environment. While also creating new jobs and saving existing ones. Moreover,

empowering members and create meaningful job opportunities with better working conditions in an environment where knowledge sharing and skills transfer takes place. The cooperatives place emphasis on local production for local and regional consumption and creative networks of local suppliers in the community and region. Whereas the authors are cognisant of the fact that socio-economic models have place- and context-specific characteristics, some of the salient features identified herein could find adoption and possible replication in diverse geopolitical contexts, including that of South Africa provided that due consideration is made for an adjustable and responsive piloting (and eventual implementation).

Economic development

Robbins (1968:5) suggested that the term is derived from Adam Smith who depicted what he called mercantile theory of wealth preoccupied with policies designed to produce favourable balance of trade. The theory suggest economic systems might mean increase in the absolute size of capital, or annual production regardless of size of the population was commonly used before the rise of classical economics. This might also mean increase in complexity in articulation of different function or progress towards defined goals. Robbins (1968:151) further defined economic development in terms of increasing real income per head or increasing potential to produce such income over a comparatively long period.

The term *economic development* implies improvements in a variety of indicators such as literacy, life expectancy, and poverty rates. It should take into consideration environmental quality, freedom, and social justice. Economic development influence and is influenced by policy through programs and projects. Economic development is delivered through the state, regional municipality, public-private partnerships their role is to seek new economic opportunities and retain existing wealth.

Moreover, there is no single definition that incorporates all different strands of economic development. Firstly, economic development is typically described in terms of its objectives, which include job creation, wealth and improvement of quality of life. Secondly, economic development is described as a process that influences growth and restructuring of an economy to enhance the economic well-being of a community (Porter, 2008). The process requires strategies that allow more people to participate. One of those is the decentralisation of production systems which have been successfully been driven by cooperatives.

Conclusion

The paper sought to explore the concept of manufacturing cooperatives and their possible contribution in sectors that are under pressure due to internal as well as external challenges. Manufacturing cooperatives are based on democratic and user-based environment. Cooperatives have a long-standing tradition in Italy and have been proven to contribute immensely to the economy through job creation. The government has also come up with policies that support the cooperatives model, which is based on community principles such as trust and reciprocity. Cooperatives are in a way a form of empowerment that is entirely driven by the citizens and is democratic and contributes to social cohesion.

Cooperative models of economic development inherently tap into society's strengths of reciprocity that sets model of development apart from commodity modes of exchange. The cooperative allows small firms to share the production process through passing certain aspects of production to other small

companies that specialise in aspects of production. By comparing and contrasting different cooperative types and models in Italy and South Africa, this study identifies unique characteristics could benefit the latter context so as to foster a more robust and resilient SME economic sub-sector. Such efforts at transferability of context-evolved socio-economic models must be phased in sensitively through appropriate quasi-experimentation before full implementation. Whereas the authors acknowledge that a wholesale adoption of the Italian model would neither be anticipated nor prudent, future studies in this area should focus on current practices in cooperative practices that have been successful in other sectors in South Africa and other African countries to see how the practices could benefit from successful models further afield, and subsequently be applied in the manufacturing sector of textiles, leather and footwear.

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ENVIRONMENTALLY SUSTAINABLE FASHION: A DESIGN-LED APPROACH

Desiree Smal

University of Johannesburg

Abstract

Each design discipline functions within defined parameters in a discipline specific manner. Designers approach design-problems from an acquired (through education and experience) set of guiding principles that provide the context of each design-process (Lawson 2010; Cross 2006). Dorst argues that the design-problem is shaped and informed by four aspects; where the activity takes place, the content of the activity, the individuals performing the activity(s) and the context of the activity (Dorst 2008:5). As the designer unravels the design-problem and gains more insight into and from the guiding design principles of the discipline; design-process decisions are based on what the designer knows is possible; the discipline's guiding rules and their design experience.

In fashion design, a commercial approach is generally taken which involves finding quick solutions to satisfy market needs. The designer that applies this approach has limited time to think or to reflect on possible consequences of design-process, with regard to the environment, to solve design-problems. Consequently, the speed-to-market phenomenon results in designers ignoring the associated environmental insight, i.e. ethical resourcing, and require others, who may not necessarily be design experts, to solve eco-related problems in the fashion design-process. Fletcher and Grose (2012:33) refer to the above as intellectual timidity which "widens the knowledge gap and hinders our [designers] taking responsibility, further marginalising the role of designers in developing solutions." The result thereof is that fashion designers, in the development of sustainable fashion, wait for government, legislation or consumer response to dictate what needs to change, instead of it being a process of design-led innovation (Fletcher & Grose 2012).

The challenges for sustainable design in fashion are profound and require vision and an engaged designer, which is different from the current practice of mere minimising unsustainable processes and components of products. As Fletcher and Grose (2012:180-181) suggest, fashion designers need to firstly, have an impact-driven approach to fashion design which is not trend-led and results in design being a driver of change. Secondly, have an approach to business which embodies social, cultural and environmental values and thirdly, be designers that are proficient strategists who embrace change.

Keywords: *Environmentally sustainable fashion design, design process, design thinking, design approach.*

Introduction

Environmental sustainability in this field is inherently complex and not well understood. A recent survey amongst practitioners in the fashion industry in America highlighted that there seems to be a wide range of misconceptions and assumptions with regard to environmental sustainability in the fashion industry. The survey by Palomo-Lavinski and Hahn (2014:87-106) re-iterates that fashion designers have a pivotal role in developing sustainable innovation. However, design-led innovation

and design-driven change requires that designers in the discipline of fashion design re-think their role in-, and the process of design of environmentally sustainable fashion design. This paper forms part of a larger doctoral discussion. Whereas other studies in the discipline of fashion have predominantly focussed on technical consideration regarding the development of environmentally sustainable fashion product, the focus of this doctoral study is the role of design in the development of environmentally sustainable fashion design in South Africa. In this paper I critically examine environmentally sustainable fashion design thinking, by referring to Lawson (2010), Dorst (2008 & 2011), Cross (2006 & 2011), and Nelson and Stolterman's (2012) approach to thinking about design, design process and designers; in order to further explore environmentally sustainable fashion design praxis. Design-led innovation and design-driven change requires that designers in the discipline of fashion design re-think their role in-, and the process of design in the design of environmentally sustainable fashion design. The paper concludes with suggestions for design-led innovation that yield change.

Design is regarded as a distinct discipline with its own area of research with the intention to develop a body of knowledge, and thus design needs to respond to current social, economic and technological imperatives (Smal & Lavelle 2011:92-198). Design as a concept shifts between a multiple of forms, ranging from the process which results in a final product to an active sense of moulding and shaping the world we live in. Design (as product planning) is a professional activity of which the outcome can be affected by an analytical approach to method, whereas design (as product) is evident of values that have been instilled in it through a number of strategies. In order to understand design praxis I explore the work of four particular authors on design thinking; from Lawson who approaches design in a more structured approach, Cross and Dorst who refer to chaos, to Nelson and Stolterman (2012:4) who argue for design being more than mere creative input. In addition to creative thinking, design is innovative, productive, action oriented within the real world and thus consists of "reflective and critical thinking, productive action and responsible follow through" (Nelson & Stolterman 2012:5). Design is the 'third way', distinct from arts and sciences, a third culture with its own approach to learning and enquiry (Nelson & Stolterman 2012:11-12). I agree with these views as, in order to develop an environmental sustainable design-driven change approach, the discipline of fashion design needs to critically engage in thinking about design.

Design thinking: structure, chaos and approach

Design as we know it today has not come about as a result of planning but as a response to change in the wider social context in which it is practiced. Lawson mentions (2010:4-5; 25) that design as activity is both precise and vague at the same time, a systematic and chaotic thinking process that requires considerable technological skill and knowledge. Both Lawson and Cross mention that designers think intuitively but respond in a manner that is familiar and that familiarity is based on knowledge and experience. Designers solve design-problems by using a range of technologies understood by the designer with regard to equipment and process. Thus design starts by finding a solution without necessarily knowing how big, or to what extent the design-problem really is. The characteristics of design-problems are not often apparent and need to be found or determined, and as Cross (2011:10) suggests, designers know that design-problems and design-solutions are closely interwoven. The problem solving process often requires regression, taking a step back in the design-process to understand another aspect that might inform it, as Lawson (2010) states, both continuously move forwards (escalating) and backwards (regressing) at the same time. Design is thus a problem solving process that requires structure at times, yet is not a simple linear process.

Design-problems have several aspects that influence or impact them, which Lawson (2010:83-111) refers to as generators of constraints (or parameters in which to work), that have a direct or indirect influence on the design problem as indicated in figure 1.

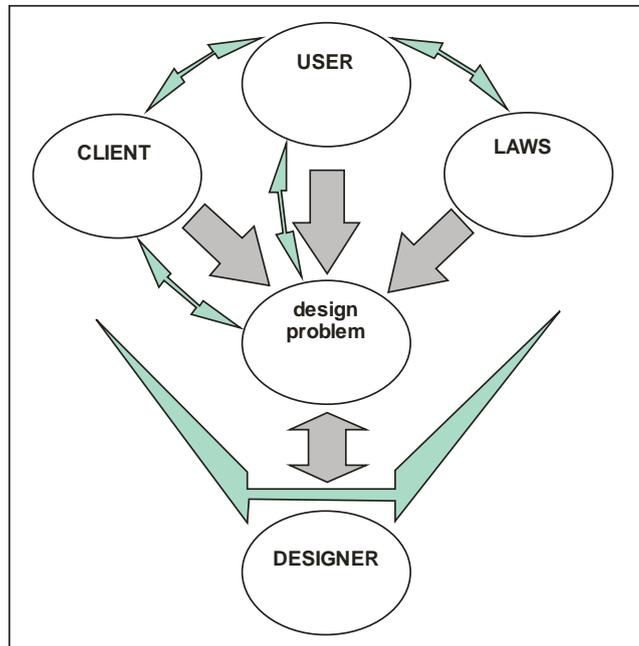


Figure 1: Generators of constraint (author's interpretation - based on Lawson 2010)

Lawson (2010:90-111) argues that each of the constraints have a very specific role to play with regard to problem solving in design. In addition to the above, Lawson adds four design specific parameters which influence the design-problem.

Radical parameters	Parameters that are fundamental as they relate to the primary purpose of the design object, process or system.
Practical parameters	Parameters that refer to the making of the product, process or system
Formal parameters	Parameters that require visual organisation of the product, process or system with regard to proportion, form, colour, texture, as and how applicable; the fundamental rules that inform the design discipline.
Symbolic parameters	Parameters that relate to meaning if and where appropriate to the product, process or system.

Table 1: Design specific parameters that inform the design problem (Lawson 2010:103-108)

Each design discipline emerges within the above parameters in a discipline specific manner. Lawson and Cross state that a designer approaches the design-problem from an acquired (through education and experience) set of guiding rules or principles, which provide the context of each design-problem, and as the designer unravels the design-problem, gains more insight into and from the guiding design principles of the discipline. This allows the designer to base their design-problem solving decision on what they know is possible; the design discipline's guiding rules and the designer's experience. Dorst (2008:5) argues that the design-problem is shaped and informed by *where the activity takes place*, the *content of the activity*, the *individuals performing the activity(s)* and the *context*. According to Dorst

(2011:526), three aspects impact the design-problem. Firstly, the levels of design expertise (as reflected in table 2); secondly the type of design activity and lastly the layers of design practice.

TYPE OF DESIGNER		KNOWLEDGE LEVEL
NAME	DESCRIPTION	
Naïve	Non-designers and could be anybody that has an influence in the design process.	The level of expertise is adequate for everyday use in conventional situations. This person is not a designer who understands that design is a series of activities and thus there is a naïve approach to design-problem solving.
Novice	Young designers that encounter design as a formal process where design problems can be solved in a series of steps.	This designer will use techniques and methods that are based in, or informed by, design rules in order to solve problems.
Advanced beginner	The advanced designer who works within a situation-based design framework.	This designer is rule based, from which problem solving starts. Slightly more complex problem solving can be achieved through increased expertise.
Competent	A competent designer selects elements in a situation which are relevant and plans to reach achievable goals.	Strategic thinking is used as the basis for design problem solving, which includes seeking opportunities and building expectations.
Expert	The expert works from accumulative experience and is able to recognise pattern in design problems and can respond intuitively	A designer that is well-respected for his/her expertise by the design community.
Master	The master designer	Designer that displays a deeper involvement with the profession and will be concerned with developing new knowledge in the field
Visionary	The visionary designer	The visionary strives to extend beyond the boundaries of the domain/discipline and operates in the margins of current design domains in the discipline; developing new domains.

Table 2: Levels of design expertise (Dorst 2008:8-9)

The above are the levels of design-expertise (resulting from experience and knowledge) which directs how the designer approaches a design-problem. Dorst (2008:9-10) mentions that designers in general display rule-following behaviour and that there is no evidence that they automatically progress on the design-level expertise ladder, as depicted in table 2. He argues that each level comprises of specific methods of problem solving and reflection, and furthers this argument by mentioning that designers do not just design. A major part of a designer's practice consists of meta-activities and that designers create the environment they work in. How designers approach a design-problem; the role they take in the design-problem and design-process; the coalitions they work within; and the method in which they deal with the stakeholders (client, user, law) of the project; all form part of the created operational environment where design takes place. Within the context of environmental sustainable design-

problem solving, the created operational environment is not instinctively apparent. Designers influence their environment with their knowledge and experience, yet for effective design-problem solving within an environmentally sustainable framework, environmental sustainability needs to be embedded within the generators of design constraint.

Fashion design praxis and environmental sustainability

The fashion industry is complex and extremely competitive. It consists of a long and fragmented supply chain that feeds into design, manufacturing, buying and distribution pipelines, operating within a global manufacturing environment. Greenberg Ellinwood (2011:1-15) and Bye (2010), describe the fashion design process as a tangible visual solution that integrates aesthetics, structure and function. They divide the fashion design process into nine steps. The first four steps focus on information gathering, research and conceptualisation and the last five steps involve implementation, sample development and testing. Very often the testing in the mock-up stage yields significant design changes and is thus an important part of design development in the fashion design process.

According to Craik (2009:221) and Kawamura (2005) there is very little written about the fashion designer and the fashion system. Because a well-designed product is needed for fashion to exist, the fashion designer personifies fashion, but in reality there is a long way between the start of a concept to the purchase of the product, and it is in this space in the fashion system that the fashion designer needs to function. Designers need to uphold brand image through keeping with trends, within business strategies that control distribution and pricing, monitor quality and efficacy of manufacturing, whilst maintaining the integrity of the brand (Craik 2009:222). With the above in mind, the fashion design-problem solving (including brand image, distribution and pricing) and fashion design-process is inseparable from the final fashion product.

One of the aspects Lawson (2010:6) mentions when he refers to the traditional design (studio work) method is paying attention only to the end product and not reflecting on the process of design¹. This is especially the case in fashion design where everything is about 'fast design' as product needs to move to market and is the result of technological advances in the industry and the consumer's insatiable appetite for material consumption. The more we present, the more is sold and thus more is produced; and as Fletcher and Grose (2012:126) suggest "doing things quickly implies that we can do more things. It also generates more impact." The general approach to fashion design is finding quick solutions to satisfy end-user needs and wants within a designed collection. If products are not popular and do not sell well, the next collection should address this. There is very little time to think about what you are doing and even less time for reflection which, as Lawson (2010:6) argues, is a much needed step in design. This approach of getting to the end product as fast as possible is specifically not conducive to the development of environmentally sustainable fashion design, as the aim of such a process is profit-driven. The designer often does very little reflection regarding possible negative consequences the design approach could have on the environment.

The design function is the pivotal key in the complex fashion system and can directly or indirectly influence design, manufacturing, buying and distribution (Black 2010:252-253; Fletcher & Grose 2012). In order to comprehend the complexity of environmentally sustainable fashion design, the definition used for this paper is based in a *design-driven* approach², which refers to:

- Products that are designed and produced taking the environment into consideration in all aspects of product development, resulting in low environmental impact during manufacturing.

- Components that exert minimal impact on the landfill.
- Components and processes that are designed in a framework of environmental and social awareness.

The complexity of the fashion system and the framework of environmentally sustainable fashion design results in designers ignoring the required technical knowledge, i.e. ethical sourcing; and require others, who may not necessarily be design experts, to solve technical problems in the design-process. A potential result is that fashion designers, in the development of sustainable fashion, wait for government, legislation or consumer response to dictate what needs to change with regard to environmentally sustainable product instead of it being a process of design-led innovation (Fletcher & Grose 2012:33). Hethorn and Ulasewich (2008) suggest that sustainability in the fashion industry is only implementable by people knowledgeable in the design and manufacturing field through an integrated approach. Therefore fashion designers need to explore potential paths of transforming and changing mainstream thinking in manufacturing and consumption.

Impact driven approach as strategy for change

According to Fletcher and Grose environmental sustainable fashion design within a contemporary fashion industry becomes relevant “where larger ecological and socio-cultural and economic forces are a re-examination of both design’s prevalent value systems and the place where design skills are traditionally applied” (Fletcher & Grose 2012:155-156). Armstrong and LeHew argue that current approaches towards environmental sustainability are primarily organised into two categories, those that “permit the consumer to maintain traditional consumption habits and those that require a transformation in consumer culture” (Armstrong & LeHew 2011:41).

In order to achieve a holistic approach to environmental sustainability, efficient use of resources, effective practices and considering consumer needs that are inherently more social than material, is essential (Armstrong & LeHew 2011:56). The focus of environmental sustainable fashion design should thus not only consider maintaining practices conducive to waste reduction and sustainable approaches to product development and manufacturing processes. These address the symptoms but not necessarily underlying problems. A need for an approach that considers transforming current manufacturing and address underlying problems of consumer consumption patterns could influence change in lifestyle. Fletcher and Grose (2012:85-87) concur and suggest a new paradigm involves building a relationship into a product that is based in empathy, which in itself has no significance but over time could lead to an imperative change in cultural and social behaviour.

Fashion design-process, although positioned at the beginning of the manufacturing process, can create positive feedback loops and have a noticeable influence in subsequent processes. John Ehrenfeld (2008:137) concurs that design can induce reflection and conscious choice and may break down unconscious behaviours, and thus design should stem from a preventative approach. Therefore, fashion designers need to be actively involved in the technical aspects of product development. It is necessary, specifically in the development of environmentally sustainable fashion, to emphasise the role of design in fashion product development. Environmental sustainability in fashion specifically needs adaptability and change from traditional (design) thinking and boundaries, to lead systemic change, and thus needs to become more engaged in culture and society. In this regard Fletcher and Grose (2012:155-179) propose four types of fashion designers for an environmentally sustainable future as presented in the table 3.

designer as communicator and educator	should result in design-leading-consumers
designer as facilitator	acknowledges that the skills required by the designer are complex
designer as activist	places emphasis on corporate social responsibility through and in design
designer as visionary entrepreneur	requires thinking outside of the normal business models

Table 3: The eco-designer (based on Fletcher & Grose 2012:155-179)

The authors (Fletcher & Grose 2012) suggest a way of design thinking, based on building knowledge through experience. Designers should move from being a component in the supply chain, to being at the hub of change. In addition to traditional design they should engage in design activities, ideas and platforms of systems and behaviours that shape the industry, such as enabling action and co-design processes. Designers need to make a choice between personal values and maintaining an income flow and consider building new models of commercial practice that embrace systemic change. The role of design in the development of environmentally sustainable fashion product therefore needs to critically engage with influences and actions that shape and define environmental sustainability. Designers should embrace the knowledge gap, as suggested by Fletcher and Grose (2012:33) that hinders designers taking responsibility in the development of environmentally sustainable fashion.

The challenges for sustainable design in fashion are profound and require vision and an engaged designer, which is different from current practice in the fashion industry of minimising unsustainable processes, products and consumer behaviour. As Fletcher and Grose (2012:180-181) suggest, fashion designers need to firstly, have an impact-driven approach to fashion design, that is not trend-led, and results in design being a driver of change. Secondly to have an approach to business which embodies social, cultural and environmental values and thirdly, be designers who are proficient strategists that embrace change. A paradigm shift (as Armstrong and LeHew suggest) places emphasis on all four of the characteristics Fletcher and Grose (as per table 3) refer to. Therefore, a design-led approach in environmentally sustainable fashion design requires that a designer communicate, educate, facilitate; be an activist and a visionary design entrepreneur.

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Endnotes

¹ Lawson (2010:6) categorises designers into three types: (1) taking a conservative approach where design is a professional activity, with the professional (the designer) the only knowledgeable (2) a professional with specialist knowledge, who attempts to involve the user in the design process or (3) a design-activist who is directly associated with the user or user groups

² Several definitions for sustainable design exist. Most originate from the Bruntland Commission's definition of sustainable design (A European Union strategy for sustainable development, 2002:21-25). According to McDermott (2006), sustainable design is a holistic approach which is driven by idealism and implemented through planned environmental sustainable design strategies. Fuad-Luke (2009) argues that the concept of sustainability has many definitions that are fairly flexible, depending on the field of study and the context in which the definition is used. Fuad-Luke suggests that "sustainability is grounded in ecological praxis and systems thinking. It challenges the capitalist thinking of production and consumption that assumes unlimited growth" (Fuad-Luke 2009:23). Typical characteristics of sustainable design refer to the triple bottom line of balancing profit (economic issues), people (social issues) and planet (environmental issues). The design-driven approach is argued in an article title Eco-fashion: fashion fad or future trend (Smal 2008:100-113), and forms the foundation of the wider doctoral discussion.

MENTORING APPRENTICE APPAREL DESIGNERS TOWARDS SUSTAINABLE SPLENDOR

Thea Tselepis

University of Johannesburg

Alex Antonites

University of Pretoria

Abstract

This paper proposes a strategy to facilitate sustainable apparel design micro and small businesses (SMMEs) in the South African context. A project with the aim to encourage apprentice designers to design for a middle income target market as opposed to an exclusive high income target market was introduced at a local fashion house. A qualitative approach was applied to explore and describe the role of mentorship in the design and interrelated business decisions included to a design project for apprentice designers. A case study research design was implemented where such a mentoring process was employed to acquire data through mixed research methods. Interviews with design teams (mentor and apprentice designers), observation and field notes provide evidence of the importance of mentorship during the design process for the other 90%. In this paper the authors discuss a collaborative design process between mentors and their apprentice designers as a strategy for entrepreneurial and financial sustainability. The authors theorize about the role of creativity and strategic thinking during the design process for the other 90% and propose an important question which apprentice apparel designers should ask in this regard before they launch their own businesses.

Keywords: *Mentorship, Design process, Creativity, Strategic thinking.*

Introduction

The failure rate of micro and small businesses (SMME) in South Africa is between 50%-95% within five years from inception (Willemse 2010). Some factors have been identified that enhance the probability that a business will survive in the long run. Skills development is one focused strategy implemented in South Africa to empower SMME owners (Allais 2012:632). Additionally, mentorship is a key strategy to enhance the venture sustainability; especially with regard to skills that can be applied to understand and interpret market needs in order to enhance the performance and growth of SMME's (St-Jean & Audet 2013:97). Nevertheless, the realm of low venture sustainability of South African (including apparel SMME's) remains a substantial socio-economic problem.

Reasons for low sustainability in the South African apparel industry pertain to the competitiveness of businesses in a global context especially with regard to garments for middle and low income markets (Morris & Einhorn 2008:356). Apparel design small businesses in South Africa compete in a global environment with imported apparel produced at a lower cost (Vlok, 2006:234). However, in South Africa niche market needs are still met with couture garments. Couture is derived from the French term "haute couture", which can be defined as made-to-measure apparel or exclusively designed apparel

set out to create a fashion trend and make a statement (Lehnert 2000:113). Accordingly, business owner-designers in South Africa who refer to themselves as apparel couture designers typically focus on exclusive and unique apparel for private clients (10% of the market). Nevertheless, with regard to business sustainability and an improved socio-economic climate in the country, apparel designers are encouraged to apply design processes that yield garments aimed at the other 90% as opposed to a design process that meet exclusive niche market needs only.

Literature review

The following section discusses scholarly work regarding the apparel design process as well as mentorship as a phenomenon that can be associated with this process.

The apparel design process

Design (including apparel design) has typically been viewed from two perspectives. One view pertains to design as art and a process where materials are utilized bearing in mind the art elements and principles (Ashby & Johnson 2013:4). Another view relates to design from a cognitive perspective which entails that design is a problem solving process (Brown 2014:6). The latter is a logical process that will be discussed in more detail in the next section.

Apparel design as a problem solving process

An apparel design process includes the planning of the apparel for customers and then the implementation thereof (Au, Taylor & Newton 2004:2). The first phases of the design process is typically applied to concept-design and the last phases pertain to the proto-type and communication of the design solution (Aspelund 2010:xiv). In view of design as a logical problem solving process, it is apparent that it has parallels to the entrepreneurial process especially with regard to identifying new opportunities (Grégoire, Barr & Shepherd 2010:431). Longenecker, Petty, Palich and Hoy (2013:61) is of opinion that starting a business also relates to the several phases that implements strategic thinking to move a process forward. A key component of both processes (design and entrepreneurial) seems to be creativity.

In recent findings Feldman (in Wu, Wu, Chen & Chen 2013:3) defines creativity as a complex integrative construct embracing “a cognitive process, social or emotional process, family and clan, formal and informal education, characteristics of domain and discipline, social-cultural context, and history”. Mohr (in Wu, Wu, Chen & Chen 2013:3), adds to the comprehensiveness of this construct by adding that creativity is a phased process of cognition and “behavioral changes”. One can derive from the latter that creativity correlates directly with the design process (which is a cognitive or emotional process) but perhaps also to the design thinking underpinning the design process that yield change through behavior. Likewise the multi-dimensional nature of creativity is apparent from the comprehensive body of knowledge on and also reported an unconditional entrepreneurial skill (Sarri, Bakouros & Petridou. (2010:271). Application of creativity (the skill) might be promoted and facilitated through mentorship.

Mentorship and design

Recent evidence shows the importance of mentorship in disciplines that require design skills for example engineering (Buchal 2011:8). The engineering design process in particular has been equated to the apparel design process in a study done by Regan, Kincade and Sheldon (1998:36). Moreover, in a study that elaborates about support during the design process, Buchal (2011:8) specifically

encourages mentorship with regard to design from a coaching perspective as opposed to a controlling (management) approach. A mentor can be defined as an advisor who assists in crafting solutions to problems and who acts as a sounding board (Hamlin & Sage 2011:275). Holmes, Hodgson, Simari and Nishimura (2010:338) assert that a mentor is also a person who encourages good performance and enhances the mentee's talent. Usually a mentor has many years of experience and knowledge in his/her field and can prevent the mentee from making preventable mistakes (Coles & Snow 2011:107). With regard to mentorship during design in particular, it therefore seems that mentorship has been applied to the logical problem solution approach to design.

In terms of the design process for exclusive couture apparel, the designer's technical skill required is advanced (Dorst 2008:8). Mentorship in this regard is therefore not a new concept and according to Buchal (2011:8) a method to let apprentices apply their design skills in real life circumstances. The emphasis on skills application in the apparel design field in particular has been on technical skills and the creativity associated with the application of the technical skills (Romeo & Lee 2013:132). There is consensus about the importance of technical skills in the design process (Dijkstra, Schott, Seel, Tennyson & Seel 2013:12; Workman & Ahn 2011). Nonetheless, the question that arises is what role does mentorship play in the broader context of the design business' market and its financial sustainability?

The research question addressed in this paper is: What role does mentorship play during the design process of apprentice apparel designers that aspire to launch their own design businesses aimed at the other 90%? The methodology implemented to address this question follows.

Methodology

The researcher was interested in understanding events, actions and processes in their natural context, which Babbie and Mouton (2001:272) as well as Denscombe (2007:35) refer to it as contextual interest. In this regard, Yin (2008:18) and Willig (2008:74) mention that a case study is an empirical enquiry that can be implemented to investigate a contemporary phenomenon within a real-life context. A case study research design was therefore implemented in this study. The particular case selected for this study is a fashion design business in Gauteng (Pretoria) that introduced a six month mentorship programme for apprentice designers who are aspiring to open their own businesses that design and manufacture apparel.

Six apprentice designers as well as two mentor designers were observed as they completed one of their projects that related to strategic thinking for commercial purposes (a broader, less exclusive market than they are used to design for: the other 90%). Interviews were done and observation notes as well as field notes were taken during their design process. Their mentors have between 15 and 18 years of design and apparel production experience and have their own sustainable business for more than 6 years. All the apprentice designers had at least a formal pattern design background and two years of clothing production experience. The evidence that address the research question is provided in the next section.

Findings

Field notes on the design brief

Apprentice designers need to each design a garment that represent the particular fashion house's brand that is more accessible to the average income market. Apprentice designers were encouraged

to design a garment in a size 10 to suit a specific target market's needs. Apprentice designers were also advised to consider the latest fashion trends and incorporate at least a tailored bodice to adhere to quality standards of the fashion house. Other design parameters was a budget that was set for all apprentice designers and collaboration with the other apprentice designers was encouraged so that the final garments could be viewed as a range with a central theme. The retail outlet for the garments is a well-established store in Centurion (Gauteng) where apprentice designers could formally launch the range three weeks later.

Observations on the applied design process

The concept-design that apprentice designers did was only done with a preliminary sketch and discussed with their mentors and with each other a week before the actual implementation commenced. Patterns for a basic silhouette A-line garment or pencil silhouette was designed, patterns were tested on a test fabric and alterations are made. Each apprentice designer then sews a basic garment in the desired fabric, but no detail is finalized. This garment is referred to as a canvas garment with many possibilities and put onto a standard body form. The apprentice designers then start to transform the "canvas" garments with each other's inputs as well as a mentor's guidance.

The role of a mentor during concept-design

Both the mentor's explained the difference between designing as an artist and what design for the other 90% entails. The following verbatim in Table 1 reflects the views of all the participants in this regard:

Mentor's view (M)	Apprentice designer's view (A)
M1: "As a designer for the boutique, it is your job to make sure the dress sells. We can all draw beautiful pictures and at times even make the pictures real. The thing is just that beautiful pictures don't pay your seamstresses and it doesn't put food on the table."	A1: "I was shocked to realize that I can't just do what I envisioned! Up to now all our projects gave us that scope. It felt like they are limiting my creative spirit."
	A2: "It is hard not to do what you want..."
	A3: "I think this is probably the way industry works. I know that my friends who are designers say it is tough out there and you have to be very smart with your designs..."
M2 "Keep the artistic ideas for the fashion ramp to show of your talent to public. It is more a marketing thing, but for now you need to aim the dress for the boutique. Be more business and make it work for the store."	A4: "I have to rethink everything fast, because my stuff apparently didn't align with the shop's type of clothes"
	A5: "I find this more challenging than trying to find that unique idea that I always do."
	A6: "Ok, so we have freedom but as long as we do it the way they want it, doesn't make sense to me!"

Table 1 Views on design as business strategy as opposed to art (Own compilation)

From the above table it is apparent that the apprentice designers were challenged with the parameters presented by the commercial aspect of their designs. It seems that the overall theme pertains to making a mind shift about their personal vision or ideas and what is expected from their mentors.

The role of the mentor during implementation

A unique collaborative design effort is implemented where apprentice designers enhance their canvas stage garments with fabric, lace, tulle and other crafted detail. The mentor assists each apprentice designer with what they think is relevant to the apprentice's strategy.

Mentor's view (M)	Apprentice designer's view on their strategy (A)
M1: "You can still push the boundaries more and take more risks. What you have here (pointing) works, bring that energy over here (pointing). The people (target market) will love this."	A1: "I guess one can still be creative, but the whole thing on creativity changed for me. It is now more about how to stick to the rules and come up with something impressive. I never thought that the part my mentor liked is good enough. I feel motivated to do more of that now. I tried something new here (pointing to part on garment) and will do more of that in the future because it will sell the garment."
M1: "I like that you try the rouging here, just be careful not to do the same thing over and over. Our brand is about being different, so maybe have a look at that technique as well (pointing to a dress that he made earlier). Something like that might work on your skirt part."	A2: "At first I was scared, but I feel ok now. He showed me some ideas and guided me. It didn't feel like he designed for me, but he really made me think about different routes to get the look I want."
M1: "I like, but remember the cost here. If you add this you might consider using cheaper lace in-between."	A3: "He really showed me some tricks of the trade to keep the cost lower and it still looks fine!"
M2: "Time is money! Remember that we don't have too much time to spend on the dress. We have to make deadline. If you feel that you need to compromise, accept it and make the best of it because it is a bigger loss if we can't launch on time"	A4: "My problem has always been time management! It was really nice to have someone that shows me the short cut. "I have seen the past week I need to let go a bit. It is no use to lose money over my own perfectionism."
M2: "Well done! You have the right idea now. The owner of the boutique will agree that this will certainly sell."	A5: "I can't believe that I did it. I managed to find the midway between creating something different and what the customers will want."
M2: "Ask yourself the whole time how your ideas can be used to still communicate the brand of the business."	A6: "In the end, I guess the creativity lies in finding freedom, but keeping the balance between what is the best for the brand and yourself."

Table 2 Guidance for each apprentice (Own compilation)

From the above findings it is apparent that the apprentice designers were becoming more flexible in their thinking regarding what they wanted and what was needed to create garments that meet the proposed target market's needs. When apprentice designers were asked about how the mentorship contributes to skills they will use in their own businesses the following statements were recorded:

Apprentice experience (A)	Mentor experience (M)
A1: "I definitely realized that fashion and business is the same thing and feel more confident to go on my own now."	"You know, this project just showed once again that we as mentors have to help the apprentice designers to understand what fashion is about...if you don't make money to keep the business going, why bother? I learn from them too. I was surprised by some of the techniques that the apprentice designers came up with. The thing is they are not afraid to try new things because everything is new to them anyway. It is awesome to learn from each other."
A2: "You can't be a designer without thinking of the different routes you have to consider for every outfit. Every route has got pro's and con's that you should weigh up. I look at which route is the fastest and will still bring in money, but at the same time try not to harm the brand with bad quality or an ordinary look"	
A3: "It is all about cost! I would have made a loss in my own business if I didn't have the mentor!"	
A4: "I need someone like my mentor to show me more economical ways to do things. I still need a lot of mentoring before I go solo."	
A5: "The lesson I learned was to put aside my own views and put myself in the shoes of the customer. I think it is a valuable lesson that I can use in my own business."	
A6: I must admit, at first I felt like the mentor clipped my wings. Later I saw he knows what he is talking about and	

he has lost a lot of money on ideas in the past. I know now that I have to be creative in different ways in my own business.”	and it also makes me want to try new things again.”
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Table 3 Reflections about the value of mentorship in terms of an own business (Own compilation)

From the above table the experience of this particular project seemed to be mutually beneficial to both parties involved. The expectations of the apprentice designers regarding their own businesses did seem to become more realistic with regard to designing for the other 90%.

Conclusions and recommendations

From the findings it is apparent that the role of the mentors in this project pertained to adjusting the apprentice designer’s expectations about their own businesses so that it is more realistic. Apprentice designers seemed to have realized the importance of changing their perspective on creativity and design. Moreover, it is apparent that optimizing resources to getting as much as possible out of every garment with regard to commercial value, involves strategic thinking. Strategic thinking in particular has been associated with entrepreneurial orientation (Slevin & Terjesen 2011:973).

Entrepreneurial orientation on the other hand has been linked to venture sustainability and creativity (Ligthelm 2011:176). The problem solving in this project pertained to finding the balance between personal design style and meeting target market needs. Strategic thinking in this regard cannot be viewed separate from creative problem solving and is part of the design process as much as application of technical skills. In this regard strategy and this application of creativity pertain to design thinking (Tracey & Baaki 2014:2). This is one way of viewing creativity in apparel design.

Nevertheless, the importance of application of creativity from an artistic point of view is not disputed in this paper. The authors acknowledge that the levels of design skills go hand in hand with the designer’s style and designer’s creative freedom. Dorst (2008:8) illustrates that as an apparel designer’s knowledge and skill improves s/he becomes more equipped to embrace designer freedom and ultimately can become a visionary designer that is not necessarily bonded by commercial boundaries. However, with regard to becoming financially sustainable and starting out as an inexperienced designer, we propose the following: 1) that apprentice designers collaborate with other designers to generate solutions to design problems that save time and preventable cost, 2) that apprentice designers should be flexible during the design process and make compromises to be more commercially inclined and also design for the other 90%, 3) that the apprentice designer should become a strategic thinker rather than just artists and apply creative thinking skills accordingly.

In conclusion the authors take on the view of Gardner (2012:46) on creativity who states that creativity is not particularly connected to the arts, but creativity is also in the realm of business. We therefore propose that apprentice apparel designers who aspire to open a business that will be financially sustainable stop asking “how creative am I?” and consider asking themselves: “how can I be creative?”

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