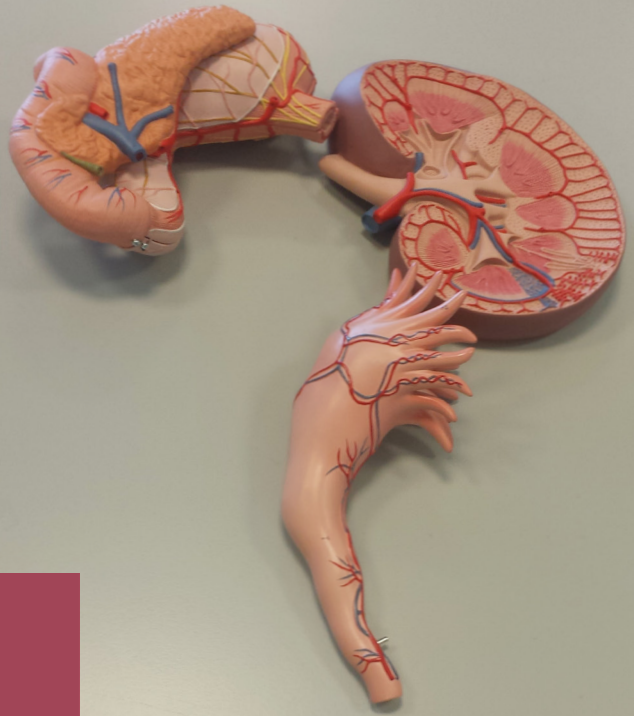


# JADE

THE JOURNAL OF ACADEMIC  
DEVELOPMENT AND EDUCATION

Issue 6 | August 2016



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The Application of Games in  
Higher Education by Louise  
Robinson

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## “INSIDER KNOWLEDGE”

image from the Multi-User Laboratory Team,  
Keele Medical School winner of “Images of  
Learning and Teaching” Photo Competition  
held at the 2016 Keele Annual Teaching  
Symposium.



# JADE

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## About

JADE publishes articles, case-studies, papers, reviews, teaching tips, letters to the editors, interviews and student submissions about learning and teaching

Author's instructions and submission procedures are available from our website: [www.jadekeele.wordpress.com](http://www.jadekeele.wordpress.com) and you can contact us directly via our email: [jade@keele.ac.uk](mailto:jade@keele.ac.uk)

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 FORWARD


**W**elcome to JADE. JADE was launched two years ago by the Learning and Professional Development Centre. The journal was developed as a space to share practice for Keele staff and students that wished to write about their educational experiences as part of their scholarly practice. It was established to publish reflections on and inquiries into the acts of learning and teaching and to disseminate that work. Staff and students at Keele University act as writers, readers, reviewers, editors; and perhaps most importantly as learners and collaborators in the endeavour to improve student learning experiences and outcomes through their contributions to JADE.

JADE celebrates teaching scholarship, an act I have previously described as a journey of discovery and personal growth, and makes teaching scholarship public – open to scrutiny and sharing with interested others. Over the past two years, the readership of JADE has grown and broadened to include colleagues beyond Keele, and in 2015, we took two decisions that will further support JADE to grow and flourish. First, we have decided to accept submissions for published articles from staff or student members of other Universities and to publish these if they are deemed to be interest to our Keele and wider readership. In making this decision, we have expanded the potential community of scholars that can contribute to JADE's future but hold steadfast the desire to sustain the journal as a place for scholarly discovery of both staff and students. Second, in support of encouraging submissions from student scholars, we also took the decision in 2015, to appoint a student Associate Editor to solicit for and encourage student contributions.

JADE continues to be a space that models innovation and creativity in the scholarship of teaching and learning. I sincerely hope you enjoy your experience of contributing to JADE, as a writer, reader, reviewer or editor, and as a learner and collaborator in scholarly endeavour.

**Dr. Jackie Potter**

*Head of the Learning and Professional Development Centre*



**Dr Louise Robinson | University of Derby**

Programme Leader & Lecturer

**L**ouise began her academic career at the University of Derby in 2012 and teaches subjects primarily related to Molecular Biology including Wildlife Forensics and Phylogenetics. Her teaching responsibilities lie throughout the undergraduate programmes in Forensic Science, Biology, and zoology as well as supervising projects on the related MRes programmes.

Louise became a Fellow of the Higher Education Academy in 2013 and was invited by the HEA to host a workshop on Gamification after presenting at the HEA Inspire to succeed: Transforming teaching and learning in STEM conference in 2015. She is an advocate of gamification within HE teaching and has witnessed the benefits of introducing these mechanics in both classroom and laboratory settings.

## THE APPLICATION OF GAMES IN HIGHER EDUCATION

“There is an interesting similarity between games and education in the way a ‘player’ passes through levels, develops skills and gains achievements.”

Gamification, defined as the application of game design elements in non-game contexts (Deterding et al., 2011), is a relatively new venture within higher education but its utility in multiple teaching environments makes it an exciting new avenue for undergraduate teaching. The term ‘serious games’ is applied when gaming is used for an educational purpose in which the acquisition of knowledge is the prime reason for undertaking the game (Michael & Chen, 2005).

There is an interesting similarity between games and education in the way a ‘player’ passes through levels, develops skills, and gains achievements as they progress. By simply altering the language used in the educational process, it can be seen that some of the key concepts of games already exist in different forms. For example, it has been said that all games contain goals, rules, and feedback (McGonigal, 2011) and when reading any module specification you will find it to contain learning objectives, assessment, and feedback. Our learning objective outlines what needs to be achieved (our goal) and the assessment sets out the boundaries in which it can be accomplished (the rules). On the path to realising this goal there will be formative feedback for the player/learner to observe their progress (in-game feedback) and summative assessment

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**LOUISE ROBINSON**

to demonstrate how well the learning objective has been met (post-game feedback/goal achievement). When goals are completed, the player/learner then progresses to a higher level and faces a more difficult task. The individual is also expected to take what was learnt from the previous achievement and apply it in a different situation to help attain the new goal. The adoption of gaming structure and language has been seen to be successful in engaging students by setting 'quests' and gaining 'experience points' - therefore in some instances turning a task into a challenge can provide a greater level of motivation (Hannify, 2012; Stott, & Neustaedter, 2013).

Arguably the most important factor which games bring to an educational environment is the freedom to fail (Stott, & Neustaedter, 2013; Dichev et al., 2014). Often in higher education there is little room for error without having the potentially drastic consequences (as seen by students) of having no results to write about or having to admit that our approach or conduct was flawed. One of the greatest ways we learn is through experiences which did not go to plan, but how can someone learn from their mistakes if they are not given the freedom to fail? The psychological impact of not achieving results in an academic setting is most often negative, either towards the subject as a whole or more damagingly, towards the individual themselves. These negative emotions are far less likely to occur if the experience is one of a game and often the desire to try again in order to 'win' is greater. The students which are most engaged with an assessment are those who believe that they can do well; the students who are aiming for the 'high score' and believe that it is achievable. This level of determination can only occur through positivity of which this behavioural change is something games can help to promote. The adoption of game elements within a classroom can be instigated in many ways and the experience can be private, with only the learner knowing their 'score' and observing progress; competitive, with each individual knowing the achievements of others and determining their ranking; or co-operative where teams or perhaps whole classes are working towards a shared goal. Tasks developed with a gameful design can be played outside of contact time and provide virtual instruction and feedback to a deeper level than an online test can achieve whilst maintaining the determination to succeed.

The power of games to quickly develop skills, create a 'hook', and promote a feeling of success should not be taken lightly nor be seen as 'time wasting' or 'switching off the mind'. Many games involve a level of concentration, cognition, and strategy development which are viewed as an enjoyable way to spend free time. The key to effective gamification is to understand why games are successful and what makes them enjoyable to play. The factors that allow a

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**THE APPLICATION OF GAMES IN HIGHER EDUCATION**

game to function whilst maintaining the interest of the player are referred to as play mechanics but equally as important are the interaction of the players (dynamics), and their emotional state (Robson et al., 2015). By using a few of these play mechanics it is possible to 'gamify' a session, in which the material being taught is the same but the way it is presented or tested is in game form; this is known as Game Enhanced Learning (GEL). It may be unfair to apply games in assessment which determines summative grades but the learning process itself is well suited to this dynamic by allowing the student to engage with stimulating activities, visually track their progress, and become more confident with the material they are learning.

This approach encourages creativity in the academic and depending on the individual, they may create and implement entirely new ideas or simply use facilities such as Quizlet in order to begin to introduce gamification within their teaching. Understanding the key criteria of games can help promote GEL sessions and therefore in order to use games to teach, first we must learn what games can teach us.

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## ARTICLE | #1

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### Title

**Issues of Student Diversity and the Role of Technological Tools for Learning in Higher Education**

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### Abstract

This paper provides definitions of student diversity within the context of the University classroom. While noting that our student populations in such classrooms are becoming increasingly diverse, the connotations of the role played by technological tools for learning and engagement are explored. The paper includes a discussion of a critical incident occurring within the author's own teaching practices, alongside examination of the social and medical models of disability in relation to technology. In addition the paper includes discussion of the necessity of an increasingly inclusive curriculum design in encouraging high levels of engagement and learning amongst a diverse student population. Recommendations are given for additional signposting and access for students to technological tools for translation.

### Keywords

Diversity, Global classroom, Translation tools, Critical incident

## Introduction

'The concept of diversity encompasses acceptance and respect. It means understanding that each individual is unique, and recognizing our individual differences. These can be along the dimensions of race, ethnicity, gender, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies. It is the exploration of these differences in a safe, positive, and nurturing environment. It is about understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual' (<http://gladstone.uoregon.edu/~asuomca/diversityinit/definition.html> accessed 11/12/15).

University classrooms are becoming increasingly diverse with the HEA (Higher Education Academy) suggesting 'A diverse student body is one which includes individuals of different nationalities, race, creed, colour, religion, sexual orientation, gender, age and socio-economic groupings.' (<https://www.heacademy.ac.uk/enhancement/definitions/diverse-student-bodies> accessed 15/02/16). As such, a '10%' rise of non EU student enrolment in UK Universities over a five year period (<http://www.universitiesuk.ac.uk/highereducation/Documents/2014/InternationalStudentsInHigherEducation.pdf> accessed 23/10/15), alongside international student numbers as high as '63%' in some UK institutions (<http://www.thecompleteuniversityguide.co.uk/international/international-students-the-facts/by-university/> accessed 23/10/15), can be seen as demonstrating an increasing level of diversity in University classrooms.

This paper aims to discuss the connection between diversity within University classrooms and the role technology plays in improving student engagement and learning through the example of a critical incident occurring within the author's own teaching practices. The impacts of the use of technological tools for learning are discussed in relation to the social and medical models of disability, followed by an exploration of the need for a continually improving inclusive curriculum design in relation to the needs of an increasingly diverse student population. The paper culminates with the recommendation of additional access for students to technological tools to aid in learning; specifically translation tools such as Todaysmeet (<https://todaysmeet.com> accessed 12/05/16).