

**Vocational teachers and workplace learning: Integrative,
complementary and implicit accounts of boundary crossing**

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Abstract

Where young people's upper-secondary education spans work and institutional domains, questions arise about learning across both spheres and its guidance. Theoretical accounts of 'boundary crossing' have explored how vocational teachers can integrate learning across domains by drawing on extended concepts and theoretical knowledge to solve workplace problems; whilst empirical accounts have validated the role of vocational educators by describing the workplace and schools as equally valid, complementary spheres. Different understandings, described here as 'integrative', 'complementary' and 'implicit', appear to reflect different national patterns of vocational education. The paper reports a qualitative study conducted around two case studies, located in Germany and England, of the way vocational teachers' understandings of facilitating learning across domains are constructed. Vocational teachers working in Germany's 'dual training' claimed to provide advanced knowledge that they compared to practical work skills, reflecting 'implicit' or 'complementary' approaches to learning across domains. Teachers in England, where workplace learning elements are more unevenly developed and lack institutional foundations, nevertheless described colleges and workplaces as distinctive, little-connected spheres. These differences suggest that teachers' approaches are less shaped by the potential or necessity for 'integrative' approaches than by the way different systems enable or constrain their conceptualisation of 'possible futures'.

Keywords: workplace learning; vocational education and training (VET); boundary crossing; vocational teachers; dual training; T Levels

Introduction

Widening recognition of the possibilities of workplace learning has strengthened its inclusion in vocational education and training (VET) across growing numbers of countries. An extensive range of literature draws attention to the value of combining learning in schools with learning in the workplace (Aarkrog 2005; Schaap, Baartman and de Bruijn 2012). However, the workplace is widely regarded as a site of largely autonomous learning, within communities of practice structured by what are broadly described as ‘production’ goals, and rationales of work and practice (Rainbird, Fuller and Munro 2004; Marsick and Watkins 1990). This contrasts with learning in VET at schools and colleges, which is normally facilitated by teachers and education professionals. VET is distinguished from general education mainly by content that prepares young people directly for employment; but increasingly widely includes early experience of work, although this takes various forms in different countries. This raises important questions about how different kinds of learning in these two contrasting environments are to be negotiated.

A common metaphor of ‘boundary crossing’ has been used to describe how learners navigate the understandings and practices that characterise each domain. Sometimes the literature ascribes the responsibility for negotiating the different expectations of each domain solely to the learner, providing important opportunities for agency to experienced workers, or adults (Kersh 2015; Harris and Ramos 2012). Other accounts focus on the role of VET teachers: Guile and Young (2003) theorised pedagogies that would move beyond notions of ‘transfer’ from theory to practice, seeking to provide synergy between school and work domains. By contrast, several empirical accounts of boundary crossing (e.g. Berner 2010) have validated the role of vocational teacher by emphasising the distinctive role of vocational schools and colleges, whilst other approaches do not explicitly describe the teacher’s role as

‘crossing boundaries’, assigning the responsibility for navigating these to the learner (e.g. Bank 2019). These three approaches are described here respectively as ascribing ‘integrative’, ‘complementary’ or ‘implicit’ roles to vocational teachers.

Such conceptualisations appear to have relationships to the national contexts within which they were developed. Recent emphasis on workplace learning has begun from different starting points and proceeds at different speeds in each country, reflecting the socially determined nature of skill systems (Bosch 2017). In Germany and some neighbouring countries, VET already combines work-based and school-based activities broadly described as ‘dual training’; elsewhere learning across both domains is replacing VET mainly based in schools, as in Sweden, the Netherlands and France (Michelsen and Stenström 2018; Schaap, Baartman and de Bruijin 2012; Maurer 2019). This raises the question of how different understandings of boundary crossing might reflect these distinctions. Case studies were therefore carried out within two countries with very different traditions and approaches to the relationship between learning sites, with the aim of exploring whether and how such constraints might affect the outlook and practices of vocational teachers.

The remainder of the paper reports this inquiry as follows: the next section sets out the differences between workplace and school or college learning environments on which notions of boundary crossing are premised. Literature illustrating three distinctive conceptualisations of the vocational teacher’s role is then discussed. The following section reviews national skill formation and education systems in which such approaches may be located. The methodology of the case studies follows. A summary of the findings is then presented, and this is followed by a discussion of the way that crossing boundaries appeared to be understood in each case, and conclusions about how these understandings were shaped by national settings.

Learning in the workplace: autonomy and facilitation

The possibilities of learning in the workplace are generally premised on the possibilities of achieving multiple goals within ‘production’ environments. Billett (2002) proposed that ‘learning is ... not reserved for activities and interactions intentionally organised for learning (e.g. those in educational institutions)’ (2002, 457) and that ‘participant learning is central to the continuity of the social practice that constitutes the work practice’ (460), suggesting that the intentions of learning and production can broadly coincide. Hodkinson (2005) argued that accounts of workplace learning over-emphasised differences between the two domains, since both can be understood as fields of practice. However, there may be tensions between the educationally based goals of school programmes and those of production: negotiation of the barriers between educational institutions and the workplace has been a significant field of research since the 1990s (Maroy and Doray 2000).

The responsibility for learning whilst working is frequently placed on the novice worker, particularly in relation to lifelong learning concepts. Situated learning (Lave and Wenger 1991; Wenger 1998) requires the peripheral participant to negotiate learning with the community of practice. A variety of practices salient in workplace learning, such as observation (Chan 2015), noticing (Rooney and Boud 2019) and mimesis (Billett 2014) emphasise autonomous learning from experienced workers. Yet such autonomous opportunities are less likely to be open to upper-secondary students, who may be positioned as learners at work but whose relationship to the workforce is more marginal than that of employed workers. The results of these distinctions can be seen in such practical areas as assessment, where students have to deal with the different expectations of each domain (Sandal, Smith and Wangenstein 2014).

Thus, notions of autonomous learning at work contrast sharply with practices in schools or colleges, which are structured around the central role of the authoritative facilitator, the teacher, although distinctions may exist between vocational specialists, general educators or other educational roles (Esmond 2019a). This constitutes a critical difference between the two domains, and a particularly important one for younger students. Thus, within the European Union, the Riga Conclusions promoting workplace learning in European policy (European Commission 2015a) were quickly followed by attention to the work of teachers and trainers, as well as their professional development (European Commission 2015b; Broek et al. 2017). This difference between the two domains is particularly important for younger students. The workplace is not entirely without facilitators, who can include supervisors, experts and even fellow apprentices (Filliettaz 2011): vocational specialists from schools or colleges may provide elements of coaching, mentoring, supervision and tuition (Mikkonen et al. 2017). Yet the connections between the two domains are relatively under-developed and tend to be unidirectional. Broek et al. (2017) for example suggested:

... that VET teacher education should be strengthened through college-industry collaboration and through improving the feedback-loop from VET system to the VET Teacher Education system (2017, 82).

Broek et al.'s (2017) examples of projects in which teachers explored contemporary practice alongside workplace trainers ascribed the dominant role in determining the content of vocational knowledge to the workplace, yet teachers appear to retain the leading pedagogic role, supported by greater development opportunities. Such discussions add to the urgency of questions about how teachers can support learners across the work-school divide. The broad and sometimes multiple meanings of boundary crossing that this entails are discussed in the following section.

Boundary crossing: integrative, complementary and implicit approaches

Boundary crossing as a concept for educational practice originated as a learning and problem-solving concept within activity theory (Engeström 2001). Engeström, Engeström and Kärkkäinen (1995) used boundary crossing to characterise a horizontal dimension of expertise: the transportation of ideas, concepts, and instruments from seemingly unrelated domains into a specific domain of inquiry, compared to engagement in multiple tasks, described as polycontextuality. Boundary-crossing can be broadly distinguished from the older term of 'transfer' by the multi-directional nature of knowledge flows in boundary-crossing: transfer is simply a uni-directional process, such as the application of theory to practice (Tuomi-Gröhn and Engeström 2003). The transfer literature had generally focused on the workplace application of concepts and techniques, with little attention to what took place in educational institutions (Akkerman and Bakker 2011). Accounts of boundary crossing have offered various alternative conceptualisations: the sub-sections below summarise key models.

Integrative boundary crossing

Guile and Young (2003) argued that boundary-crossing by schools and colleges could provide essential opportunities for students to solve problems they had encountered in the workplace, using generalised industry knowledge and relevant theories drawn from the kinds of knowledge available in school settings. Such generalised knowledge could provide important opportunities for students to make sense of the variations in knowledge that they can encounter across different institutions and workplaces:

Learning in modern workplaces is a process of participation but it also involves the acquisition of knowledge which may or may not be available in the 'communities of practice' in which people find themselves (2003, 66).

This approach did not oppose learning in schools or colleges to learning in the workplace but explained how the two could be usefully integrated. Drawing on Tuomi-Gröhn and Engeström's (2003) concept of 'expanded learning', the authors moved on to explore how relationships among teachers, employers, trainers and students might be reconstructed in ways that addressed workplace problems.

This can be described as an 'integrated' approach to boundary crossing, with vocational teaching drawing together learning across both school and work domains. Although the student also has an important role in negotiating learning across domains, the teacher is expected to engage with what the student learns in the workplace and to introduce relevant models, concepts and theories that normally reside within schools and colleges, so that the student can understand their practical experiences on a higher level.

Complementary boundary crossing

Empirical contributions have engaged less specifically with pedagogies that span workplace and school domains. Berner (2010) instead identified unique activities undertaken in schools that are not possible in a production environment: fostering, allowing for mistakes and broadening perspectives. This approach argued that vocational teaching made a specific contribution to young people's learning, which should not be:

...assimilated into the schooling of theoretical subjects; neither should it a priori be seen as an inferior form of training relative to apprenticeship (2010, 28).

Tanggaard (2007) used the language of boundary crossing specifically to argue that the differences between work and school settings should be seen as complementary rather than as a source of conflict or misunderstanding. Tanggaard argued for:

a model conceptualising trade vocational school and the context of trade practice as being dissimilar practices, which do different kinds of work, have different values and are structured by different kinds of knowledge and power (2007, p. 457).

These contributions emphasised the roles of vocational teachers as having the potential to draw more broadly on knowledge, meeting not only the broader purposes of school-based education but also work practices that extend beyond the confines of firm-based training.

Yet these approaches allocate a less ambitious role to teachers in facilitating learning across boundaries. They correspondingly reflect different conceptualisations of the role of the teacher and their professional formation. Thus, Fejes and Köpsén (2014) examined participation across three ‘communities of practice’ for vocational teachers, including teacher education. The emphasis here was on teacher development: some of Fejes and Köpsén’s (2014) respondents felt able to update their occupational expertise through private work or supporting student placements; others had given up trying to keep up with their field. Direct engagement with the student’s workplace learning, however, appears less salient in this approach.

These accounts are described here as representing ‘complementary boundary crossing’. Whilst validating the vocational teacher’s expertise, they appear broadly to accept that learning at work is the domain of industry trainers, the community of practice and the autonomous learner, who appears to retain responsibility for making sense of these contrasting domains.

Implicit boundary crossing

The complementary approach to boundary crossing is closely related to accounts that reject the terminology of boundary crossing altogether. Recent work by Bank (2019) found that school and workplace play distinctive, complementary roles in dual training.

Co-ordinating approaches were found to have no basis in law and to be discounted by apprentices, teachers and trainers in an empirical study. The kind of practical engagement with workplace problems suggested by Guile and Young (2003) was specifically excluded by participants who demonstrated little understanding of the role played by those in the opposite sphere.

This work makes no explicit reference to boundary crossing. Yet it has much in common with complementary approaches: practitioners in each sphere regard the work carried out in the other sphere as quite distinctive. Moreover, where students (including the apprentices in Saxony whom Bank studied) are required to learn in both domains, it follows that the responsibility for boundary crossing, making sense of the relationship between learning in both domains, will lie with the student. I therefore describe this as ‘implicit boundary crossing’: a theoretical approach that makes no mention of such practices by the teacher, yet in many ways draws similar conclusions to those of complementary boundary crossing.

Theories of boundary crossing have their origins in countries where learning at work is less firmly embedded in vocational education and skill formation but has been strengthened during recent years as neoliberal policies took hold, for example, in Sweden (Köpsén 2014; Dovemark and Holm 2017). This suggested that the different approaches to boundary crossing might reflect national differences in VET systems, including elements of teacher resistance to neoliberal discourse, rather than established balances between the two domains in countries where learning across domains is more firmly established. Whilst a full-scale evaluation of all such national differences lies beyond the present paper, the following section discusses essential differences that are relevant to the discussion of boundary crossing here.

Workplace learning in international VET

Widespread attempts to identify ‘best practices’ in the arrangements for vocational education have emerged from several sources in recent years, including the European Union (2015a, 2015b) and ILO (2017). The global economic crisis from 2007 onwards has been an important factor in many OECD countries shifting the balance of vocational learning towards the workplace (Keep 2017). Yet variations across nations persist (Clarke and Winch 2015).

These may reflect a different balance of how skill formation is distributed across the workplace and the classroom from that which traditionally characterised national models of VET (Greinert 2005). The differences relate more to the supporting arrangements that the comparative institutional literature denoted as central to patterns of interlinked socioeconomic policies (Crouch, Finegold and Sako 1999; Hall and Soskice 2001), whilst attention to institutional theories also informs studies that specifically address the constraints governing educational and skills policies (Markowitsch, Käpplinger and Hefler 2013). Busemeyer and Trampusch (2012) characterised as ‘collectivist’ the arrangements in Germany, Switzerland, Austria, Denmark and Holland that enable learning in the workplace without a corresponding narrowing of VET into firm-based training: the placement learning opportunities and assessments that employers provide and social partners support, the role of the state in certifying skills. These shifts have proved more problematic in more liberal market economies, where the state urges education providers to provide the ‘skills employers need’ and provides market incentives (Esmond 2019b).

In a balance sheet of recent developments, Maurer (2019) has argued that apprenticeship has only enabled workplace learning to become a substantial element of

formal VET in very few countries, notably Germany and Switzerland, where its origins can be traced back over more than a century of development, negotiation and contestation (Gonon 2012; Thelen 2004). Maurer (2019) has identified three approaches designed to increase the spread of workplace learning. The most salient in Anglophone countries has been apprenticeships, yet to develop substantially in the US, and in England suffering from past expansion at lower levels with minimal training (Richard 2012; UK Government 2015). Secondly, the strengthening of work-based learning in upper-secondary VET has developed unevenly across Scandinavian countries (Virolainen and Persson Thunqvist 2016). Maurer (2019) defines a third approach as ‘strengthening apprenticeships at different levels of formal education, including higher education’ (2019, 559), exemplified by French *formation par alternance*. This brief sketch neglects many variations but provides important context for the various ways in which teachers may conceptualise their practice in different national settings, and how this may be shaped, for example through professional formation.

Thus, Keller and Barabasch (2019) for example describe complex arrangements by which teachers of vocational subjects in the well-established Swiss system are prepared, including professional qualifications and work experience in their occupation, as well as teaching qualifications that vary according to linguistic regions (2019, 1757). Significantly, these pay attention to:

...the coordination of the learning at the three different learning venues: vocational school, host company and branch course training center [so] that all teachers/trainers involved... understand the learning environments their students are confronted with (1761)

In contrast to these expectations for institution-based teachers to coordinate learning across the locations in the Swiss system, teacher education is no longer compulsory for vocational teaching in Sweden or in England (Fejes and Köpsen 2014; Lingfield 2012).

In Sweden, a new programme for vocational teachers conceives pedagogy as a ‘complement’ to occupational expertise; in England vocational educators have found it difficult to secure permanent roles in spite of discourses that favour occupational over pedagogic expertise (Esmond and Wood 2017). Without exhaustively evaluating patterns of VET and teacher formation across many nations, it will be evident from these examples that the need for, and the challenges of, teachers facilitating across domains are likely to differ according to national settings.

Two of the countries discussed above were chosen for further investigation. Germany represents one of the most securely established examples of ‘dual training’, with strong institutional support from industry and government. Its vocational teachers in school and colleges have relatively high status once they have completed rigorous programmes of professional formation. In England, by contrast, workplace learning is still under development as a component of most full-time VET programmes, notwithstanding policy emphasis on ‘employer-responsive’ provision under successive governments. Workplace learning has begun to form an increasingly substantial part of full-time further education (FE), including the ‘T Levels’ due to begin in 2020 (Independent Panel on Technical Education 2016) but current levels are limited to minimal ‘work experience’ outside certain occupations (Wolf 2011; Esmond 2018). The study design is reported next.

Research design

The study examined the question of how practitioner understandings of learning across industry and school or college settings are shaped by national traditions, patterns and policies for VET in these two countries. A study not only of discourses and practices but of the meanings that social actors ascribed to them required a qualitative

methodology that could capture the understandings, orientations and identities through which vocational teachers interpreted notions of learning across boundaries. As Desimone (2009) has pointed out:

Qualitative inquiry is especially useful for answering questions about how policies operate in different... contexts. Since we know that policies may be differentially effective across contexts, insights into contextual interactions and effects are critical (2009, 169).

Such distinctions are difficult to analyse on a statistical basis. For example, OECD figures show Germany as the country with the highest number of apprentices and England as having the highest number 'working outside apprenticeship' (Schleicher 2015). Nor does expert testimony accurately capture the interpretation of institutional forms and policies by practitioners. Thus, the study required the recruitment of a sample able to provide data that could be subjected to interpretive analysis.

Sample selection

The samples and data collection methods differed across the two studies, reflecting the arrangements for workplace learning in VET in each country. In Germany participants were selected to provide a cross-section of vocational teachers, with different perspectives and levels of experience in dual training. As differences in professional formation exist across the German states or *Länder*, the study took place in the most populous *Land*, North Rhine-Westphalia (NRW). Access to a large vocational school was negotiated through an NRW university that provides VET teacher education; and practising teachers at the school (which teaches courses for white-collar occupations, including retail) were invited to take part in interviews in English, with four experienced teachers accepting. These were complemented by interviews with two head teachers of other vocational schools, who also act as professional teacher educators at centres offering the second phase of teacher education, or *Referendariat*. These

interviews were also negotiated through the local university. Finally, two trainee teachers responded to an invitation to Masters in VET students at the university.

Respondents in England were recruited from FE colleges (the main vocational institutions in England, mainly teaching 'study programmes' at upper secondary level), which were either already noted for their provision of work-based qualifications, or were among the centres chosen to provide the 'T Level' qualifications introduced from September 2020. In most areas of provision within FE colleges, workplace learning comprises the small amounts of 'work experience' (often limited to a few days) currently included in 'study programmes'. However, a minority of courses, such as childcare, entail longer spells of learning in the workplace; and the T Levels are intended to include substantial placements of around two months' duration. Three focus groups were held around the subject areas where T Levels will be introduced, with participants recruited through three colleges and a local nursery that offers early years placements: 4 respondents took part in a focus group for the small specialist area of professional construction; 11 attended one for computing and creative media; and 8 for early childhood. All participants were vocational teachers, except for five early childhood practitioners, workplace experts whose work provided educational insights. Table 1 summarises the participants and pseudonyms of those quoted directly here.

Data collection

Data collection in Germany took place through individual interviews and one paired interview. A detailed interview schedule covered four areas: background, training programme, professional role and future expectations. In-depth qualitative interviews took place over periods of between one and two hours, conducted in English. In England, because many vocational teachers have limited experience of teaching

Case study location	Role in vocational education	Number of participants	'Names' of cited participants	Gender/ethnicity
GERMANY (NRW)	Senior teacher/ teacher educator	2	Klaus	Male white
	Vocational teacher	4	Dieter Inge Katrine	Male white Female white Female white
	Trainee teacher (Masters in VET student)	2	Jana Lena	Female white Female white
ENGLAND	Early childhood FE teacher	3	Harriet	Female white
	Early childhood workplace trainer	5	-	-
	Professional construction	11	Brian Ro Alex Ralph	Male white Male white Male white Male white
	Computing/creative	4	Neil	Female white

Table 1. Participant roles in vocational education and anonymised names used to reference cited participants

programmes where students learn in the workplace, data collection was organised around short films that members of the research team had earlier helped to produce for a professional development body. Featuring workplace practitioners, employers, teachers and students on placement, talking about their workplace learning experiences, the films were used as representations of learning across domains in order to elicit responses (Cooke 1994), rather than as a means of capturing data, both of which are included in film elicitation (Nichols 1991; Harper 2002). Around 20 minutes of film were shown, stopping when participants wished to speak, and with longer summary discussions afterwards around similar interview guides to those used in Germany.

Both the individual interviews and focus groups were taped and transcribed using pseudonyms. All data was anonymised at the point of collection. Ethical approval was granted by the University for both German and English studies, with conduct of the project consistent with BERA (2018) ethical guidelines.

Data analysis

The transcripts were treated not as the subject matter of the study but as ‘tools for the interpretation of what was said’ (Kvale and Brinkmann 2009, 192) and a process of thematic analysis was undertaken with the explicit aim of discovering the relationship between the respondents’ accounts and their context. This process moved from the identification of codes to a search for themes (Rivas 2018) but without the expectation that these would emerge in the same way within the two national contexts. Moreover, the analysis noted the tensions Tannen and Wallat (1999) described between:

... the stability of what occurs as a consequence of the social context, and the variability of particular interactions which results from the emergent nature of discourse (1999, 347).

Thus, some meanings reflected the prior assumptions of the researcher and participants in the study, based on their prior assumptions and interpretations of one another’s expectations, whilst others emerged from the interactions of the interview, particularly in consequence of film elicitation. Nevertheless, key themes can be identified, with variations across the two settings, and these are set out in the following section.

Findings

Germany

Although the German sample was drawn from educators at different stages of professional development, dual training unsurprisingly provided the dominant theme of participant accounts. Despite their differing perspectives, it constituted the means by which they rationalised their own practices. For senior practitioners providing the second phase of teacher training or *Referendariat* (where novice teachers, who have already completed a masters in VET, study part-time at the centre whilst teaching in a school), dual training was offered as a metaphor for valued practices. Klaus described

this phase as a kind of dual training analogous to apprenticeship, in which teaching at a vocational school provides the workplace learning elements for the novice teacher and the teacher-training centre corresponds to the vocational school. Since the *Referendariat* is closely focused on teaching practice, this appeared to suggest a fairly integrated conceptualisation of boundary crossing within teacher education, as well as an idealised view of an effectively functioning education apprenticeship system.

Yet the most inexperienced participants, the Masters in VET students, suggested more critical approaches, echoing different views sometimes held by apprentices. Jana, who had completed an apprenticeship after her *Abitur* (high school qualification, traditionally leading to university but also, increasingly, a route into apprenticeship) recalled viewing her work experiences as providing the knowledge and expertise for her occupation. School proved more frustrating: she described:

... a feeling that I don't learn anything at school... because at the company, I could do anything: I am effective and helping my colleagues. But at school it was just sitting and waiting ... I was most of the time too polite to say something like this (Jana, Masters in VET student).

The student participants appeared conscious of tensions, such as how vocational teaching might engage with workplace practice. They expressed concerns about whether theoretical concepts on their course, the masters degree they took before completing the more practice-based phase of teacher education, would prove useful in teaching students whose apprenticeships were mainly spent in working practice. Lena observed of her course:

You learn a lot about economics and maybe the macro economics ... really abstract. That's not what the students like on vocational training learn or have to learn, to really work in a company with this everyday business. (Lena, Masters in VET student).

Conversely, the experienced teachers interviewed identified their professional formation as the basis of their subject expertise. Abstract knowledge provided the basis of their authority and expertise, justifying the extensive training period for German vocational teachers irrespective of how much it featured directly in their teaching. The pattern of attendance described by participants involved more time in the workplace than at school (two days at school, four at the firm, with overlap); whilst the chambers, the *Handelskammern*, effectively dominated learning in both work and school domains, as the body that set examinations. Yet the practising teachers interviewed asserted the need for high qualifications, which Dieter, the most senior of the teachers interviewed at the vocational school, justified by the need for students to move beyond their ‘very ordinary’ routine learning at work:

If my working would be reduced to this kind of stuff, the students would tell me, ‘Why do I have to come to school? That's what I learn every day at my company.’ I can tell them, ‘This is my product, don't you want to buy it? It's very interesting. It's red. But we do have two in the colour green.’

It's necessary, but it's not enough. If they want to cope with more complicated processes, it's necessary to come to school. If it's necessary they come to school, we need teachers who are better educated on this more abstract level of knowledge. (Dieter, Ger. teacher)

Not only did the teachers describe their role as teaching at a higher, more abstract level than the practical aspects taught in the firm: sometimes the latter were characterised as low-level and routine. Dieter provided examples of a student in a real estate firm, who would not learn the technical requirements of their job in the workplace:

If he was responsible for contracts about renting or selling houses, or doing the relationships between the landlord and the renter... all this stuff is only taught in our school (Dieter, Ger. teacher).

This account tends to minimise the extent of learning in the workplace, sometimes reducing this to the level of behavioural socialisation (see Esmond 2018):

I think it's necessary that... they prepare for work life: to get up at seven in the morning; to cooperate with your colleagues; to do what you have to do; to have a boss; to get to get used to all this mechanism of professional life. But without the school their practical experience wouldn't be enough (Dieter, Ger. teacher).

Other teachers acknowledged difficulties flowing from varying learning environments at different firms. Inge compared the learning opportunities offered by multinational companies with structured training programmes to those of 'street-corner mobile phone shops' (Inge, Ger. teacher). A third teacher at the vocational school, Katrine, described her vocational school organising workshops where firms with advanced practices – an example was given for digital marketing – put on demonstrations at the school for other firms. For Katrine, teachers were 'the people who make dual training work,' (Katrine, Ger. Teacher), by sharing the experiences that apprentices would have in the best workplaces with students who have more limited learning opportunities at work.

Yet even in this example, teachers did not personally here engage with the problems that students encountered in the workplace. Katrine suggested that an apprentice might come to the staff room and ask about a local problem but that this was rare. Students used published case studies of hypothetical firms as the basis of their studies, with teachers rarely asking them to cite examples from their own experiences. The participation of social partners, the role of the *Handelskaemmern* in setting out examination, and of the *Land* in endorsing curriculum and teacher training requirements may contribute to an effective system in which vocational teachers justify their own role but intrude little into other settings.

England

Vocational teachers' dispositions towards workplace learning in England reflect its evolving position in FE. This sector once mainly taught part-time students but, with the

onset of large-scale youth unemployment in the 1980s, expanded full-time provision at a time of scarce opportunities for employment and learning at work. Recent policy imperatives have sought to build early experiences in employment settings into the post-16, upper secondary curriculum, first with the work experience introduced by the Wolf Report (2011) and more recently with the substantial placements that provide the distinguishing feature of ‘technical education’ (Independent Panel on Technical Education 2016). The cautious progress of these reforms, whose first courses started in September 2020, reflects the absence of institutional frameworks to support upper-secondary learning opportunities (Esmond 2019b). The first courses were limited to early childhood education, which entails lengthy student placements already, and the specialist areas of software engineering and professional construction.

In early childhood education, although students appear to experience an uneven quality of placement (Esmond 2018), the industry benefits from a workforce with an educational outlook and some traditions of providing guidance for industry-based learners. Teachers argued that this enabled them to use these opportunities to fit with what students need from their course:

Because there's a good knowledge of the local providers, and you've got those relationships, you can then hit the needs of the students more targetedly, to which places [are] going to be more nurturing or what kind of data that they might need (Harriet, early years teacher).

Yet even in these settings, distance between workplace and institutional settings remains, with workplace staff complaining that they did not know enough about placement students’ courses or individual needs and regretting that college-based tutors did not take up opportunities to experience their settings. Even in this field, the possibilities for collaborative teaching and learning across college- and practice-based fields appeared partly unfulfilled.

For FE teachers in other fields, learning at work remains largely outside their students' experience and their own pedagogies. The focus group for computing and creative tutors began with some discussion about what 'industry placements' might describe:

There's some semantics about what the workplace means. For us, the workplace could mean an individual working at home. And that's not necessarily where they'll get permission to do stuff (Brian, computing focus group).

On one level, this reflected the practical difficulties of organising 'work placements' in an area of small-scale employment, where 'the workplace' may be a one-room office or in a developer's home. More widespread scepticism about possibilities included one participant describing 'sending students into non-existent jobs' (Ro, creative media teacher) and another suggesting that, 'Student placements are government propaganda' (Alex, creative media teacher). Yet it also evidenced the lack of mechanisms regulating relationships between workplace learning and colleges. Teachers in this case study were focused on the difficulties of securing placements, rather than possibilities to engage across boundaries. Instead, the discourse of 'employer-led' provision appeared to constrain their thinking:

Isn't it for employers to tell us what's missing? ...

Because whatever [students] can be creatively, it becomes a pastime and a recreational activity that they then have to apply. And if they don't know how [large local manufacturing firm] can use creative skills, they'll be shot [i.e. condemned because of their lack of knowledge about industry applications] (Ralph, creative media teacher).

However, this acknowledgement of contemporary policy discourses appeared to exclude engagement with workplace learning in the integrative sense described above.

These difficulties extended into the professional construction area, where the focus group also described the sources of knowledge and power as located in the

workplace. Yet the teacher's engagement with these was not to intervene in, or supplement, student learning:

Neil (programme leader): We've organised every Wednesday afternoon is non-teaching going forward, so that we can do site visits -

Researcher: To see students?

Neil: No, to do stuff we're interested in! Every Wednesday afternoon... I could ring up [project manager] on their smart motorway and say, 'Have you got an afternoon to accommodate us?' And when she says, 'Yes,' we'll get in in the car and go down.

Here a conceptualisation of the teacher's role as technical expert extended to learning in the college, where students learnt theory from teachers who were acknowledged as experts in specialist fields. Yet this expertise was not deployed in direct relation to the experience of advanced techniques that some students were gaining in industry, or to the problems they encountered at work.

Analysis

In both jurisdictions, teachers offered rationales for action that reflected the significance ascribed to workplace learning in each national context. Their accounts not only acknowledged the significance of workplace learning in the education of their students, and their own role in its facilitation, but also reflected the institutional forms that structure this learning.

Thus, in the German case study, dual training provided a central rationale for the identities and practices of all participants, even though they positioned themselves differently in relation to learning in workplace settings. For senior teacher educators such as Klaus, the balance inherent in dual training provided a metaphor for their own expertise. The student teachers were still puzzling out the significance of propositional and theoretical knowledge for work-based practice. The teachers based at the vocational

school acknowledged the workplace as the dominant setting in terms of the time that apprentices spend in the workplace and the authority of the *Handelskammer* in setting assessment. Although their claims to expertise included advanced occupational skills, a higher theoretical knowledge and pedagogic practice, they conformed largely to the expectations of ‘complementary’ accounts of boundary crossing, such as Tanggaard’s (2007) description of ‘different kinds of work... different values and... different kinds of knowledge and power (2007, p. 457). Thus, their claims were restricted to curricula and pedagogy for their own domain, rather than the analysis of workplace problems.

Perhaps in distinction from some Scandinavian accounts, this complementarity was based not only on their own claims to expertise but on the acceptance of practices in the work sphere and of such institutions as the *Handelskammer* and various levels of government in determining the continuation of education and training on the dual model. Even in Katrine’s account of sharing the most advanced practices across firms, the companies with advanced technique were given agency, rather than the teacher, as in Guile and Young’s (2003) account.

In England, the relationship with workplace learning appeared still more tenuous. Whilst respondents recognised, and in some cases accepted, policy discourses that position ‘employers’ needs’ as the key rationale, vocational teachers lacked any understanding of why it might be valuable for them to engage with employment practice, or how this might be possible. The participants who most coherently described working across boundaries were the early childhood educators, work-based trainers in an educational field rather than vocational teachers. The teachers in this case hardly mentioned their own expertise, unlike teachers in Tanggaard’s (2007) and Berner’s (2010) accounts, nor did they engage with such notions of engaging with students’ learning at work as those of Guile and Young’s (2003) study.

These differences in the most immediate sense reflect UK government policy discourses of ‘employer-led’ curricula, rationalising the recent insertion of workplace learning into the curriculum as ‘putting employers in the driving seat’, which provide little discursive space to create a vocational educator professionalism engaged with workplace learning. However, the long-term approaches to policy associated with ‘liberal market economies’ (Hall and Soskice 2000) constrain teachers’ outlooks within marketised approaches: by contrast with the German data that clustered around the concept of dual training, no such over-arching concept provides an equivalent reference point for vocational teachers in England. In the absence of any role for social partners, Guile and Young (2003) noted that the possibilities for expanded learning were based on assumptions of collaboration ‘problematic in countries like the U.K.’ (2003, 76). To ascribe teachers a more proactive role in facilitating learning across boundaries may be construed as resistant to policy logic. Yet without a proactive role for teachers in facilitating learning across domains, there are questions about what students will gain from their experiences in workplaces that are seldom designed to facilitate or accommodate learning. The absence in the English study of notions associated with boundary crossing reflects not the absence of any need for such practice but the difficulties of thinking of it in these settings.

Conclusion

The study researched a construct which has been variously used to conceptualise idealised pedagogic practices and to report vocational teachers’ narratives of expertise and identity, developed in different settings and jurisdictions. The analysis offered here offers possibilities to enable comparison between two national settings, notwithstanding the limits imposed by the scale of the study. It provides indications that support the

original suggestion that variations between practices in different settings reflect the distinctive national institutions and educational practices of particular countries. These differences do not reflect appear to reflect any objective or subjective estimation of the needs of skill formation, educational practice or social justice. Instead, they reflect traditions, institutions and patterns built up and contested (Thelen 2004) over past decades, reinforced by contemporary policies.

Vocational educators remain positioned to offer broader perspectives than many of those who guide workplace learning within the constraints of specific businesses and operations, even if they lack the specialist, up-to-date knowledge and skills available in more advanced firms. Their interventions may prove crucial in deepening and broadening the learning of placement students, so that they benefit from the most advanced practices, build on and acknowledge theoretical concepts, and understand the wider implications of their uses of technique. Notions of integrative boundary crossing can provide important direction to such activities, and they may be more urgently needed in countries where boundary crossing practices are as yet hardly contemplated.

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