Crossing Polycontextual Boundaries: The role of context in learning

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Abstract

All learning occurs in a context. This context may be physical, social or psychological or, as Illeris (2002) argues, the tension caused by the juxtaposition of all three spheres of human experience. Yet, there is little written in educational literature about how the context shapes the learning and, by extension, how we can increase the potential of individuals to learn in a variety of contexts.

This presentation draws on my recently completed PhD research in which I attempted to discover how practitioners understand the transfer of existing competence to new contexts and how this understanding shaped their own and their students' learning. It outlines some of the main findings of the project. In particular, it challenges the concept of generalisation as abstraction, arguing instead for Van Oer's (1998) concept of embedding contexts and looks at changes we need to make to the metaphors of transfer if we are to integrate formal and experiential learning

Introduction

This paper looks at three problematic issues relating to the theory of experiential learning, especially learning through and from work. If we are to integrate formal and experiential learning, to match the rhetoric of a learning, or knowledge, society, then we need to find new ways of understanding the role of context in learning, the nature of transfer of competence across different work contexts and to redefine generalisation.

I commence with a brief outline of my recently completed PhD research in which I attempted to discover how practitioners understand the transfer of existing competence to new contexts and how this understanding shaped their own and their students' learning. I then summarise those findings which directly relate to the issues of context, transfer and generalisation before concluding with a discussion of what is needed to prepare and support experiential workplace learning in contexts characterised by change and uncertainty.

Outline of the research

This research thesis is focused on the question: "How do practitioners understand the transfer of competence (that is, what they know and can do) across different workplace contexts and how does it influence their practice?"

The research investigates the experiences and perceptions of 108 workers, who have changed jobs or whose jobs have changed, as to how they were able to adapt what they knew and could do at that time. The research is phenomenological, using a methodology designed to collect and analyse data from the participants without decontextualising it. The methodology is customised and contextualised to the

research, and uses activity theory, Engeström's theory of expansive learning, grounded theory and discourse analysis to interrogate the research question.

The collection of data occurred over a period of five years and was in two stages, with the second stage validating and building on the first stage. Minimally structured interviews and a questionnaire were the main data collection tools used. Some descriptive statistics have been used but the research is qualitative in intent. The questionnaire used in the second stage of the research was grounded in practice as participants used "stories" of their own experience as the basis of their responses

The research drew on current theoretical positions of learning, transfer, experiential learning, workplace learning, activity theory, qualitative research and reflection on experience. The thesis has been written to foreground the voices of the participants and the insights their experience brings to the research. The research addresses a current gap in research work, carried out in Australia or overseas, which focuses on the transfer of competence across workplaces. The outcomes provide new perspectives on the ways in which practitioners understand transfer and integrate these interpretations into their practice. It strengthens the notions of consequential transfer and generalisation without decontextualisation, and thus makes a contribution to our collective knowledge and understanding.

Research Outcomes

The key outcomes of the research are a metaphoric framework to guide the transfer of competence over different work contexts (Down 2005); a record of the application of new understandings of transfer as a sequence of consequential transitions (Beach 1999); generalisations derived from the embedding of contexts (Van Oers 1998); and an innovative research methodology. In addition, the participants have provided their perspectives on the preparation of, and on-going support for, people entering or crossing workplace contexts, and the consequential, necessary changes to institutional learning.

The research deals with everyday practice and how we learn from it. The findings of the research reinforced my belief that our teaching and learning practice, whether formal or informal, needs to substantially alter to be consistent with our rapidly changing social and technological environments. Such alteration involves a move from learning as the acquisition of information and understanding to learning as an active interaction with the social, physical and psychological environments in order to better understand and work within them.

Over the past two decades, the rhetoric of teaching and learning practice has reflected a move from a teacher centric approach to learning to one which is more learner-centred. The findings of my PhD research suggest that this move needs to go even further. Teaching and learning need to be context- rather than content-centred and learning understood as the knowledge developed by interacting with contexts in thoughtful, reflective processes.

Research Findings

The research findings were consistent with a view of learning as an interaction with its context in order to better understand and work within it. Although the research participants were reflecting on their, and their students, learning experiences, the design of the research meant that such reflection was grounded in an experienced scenario, which they had reconstructed. Thus, the reflection was focused on how they had experienced, changed and been changed by the context of the scenario they had chosen to analyse.

This might be termed situated reflection insofar as it is consistent with descriptions and explanations of situated learning. Situated reflection takes on:

> The proportions of a general theoretical perspective, the basis of claims about the relational character of knowledge and learning, about the negotiated character of meaning, and about the concerned (engaged dilemma-directed) nature of learning activity for the people involved.
> (Lave and Wenger 1991, p. 33)

This is whole person reflection in which 'agent, activity, and the world mutually constitute each other' (p. 33). Such reflection may occur on an individual or collective basis; it may be internal or collaborative. My research outcomes included the development of a metaphoric framework to guide such situated reflection. This framework builds on Schön's metaphor of a swamp (1987, p. 3) to describe the lowland of everyday professional practice and uses virtual spaces, each with its own set of physical, social, and psychological contexts, in which the reflection might occur to ensure that the resultant learning and application is both iterative, developing and on-going.

The framework has been outlined in both my thesis (Down 2006) and several conference papers (for example, Down 2005). This paper specifically looks at the issue of the transfer of what we know and can do across different contexts and the learning which accompanies such a transfer.

Rethinking the transfer of learning

The 'transfer of learning is a multifaceted problem at the core of learning' (Pea 1987, p. 639). The transfer of knowledge is not just an individual achievement. It is embedded in context, impacted upon by our individual ontology, and is multidirectional.

Transfer, as a construct of educational psychology 'refers to the appearance of a person carrying the product of learning from one task, problem, situation, or institution to another' (Beach 1999, p. 101). The issue of transferability is, obviously, an important one with respect to workplace performance. Most of our formal education systems are basically vocational in intent, and based on the assumption that competence (or even individual competencies) are transferable across differing work and education contexts.

The research participants reflected, as might have been predicted, a range of understandings about the transfer of competence. However, contrary to expectations, the majority appeared to recognise the interactive nature of transfer and its role in

learning. Such responses supported the link between transfer and effective assessment of competence as put forward by Bransford and Schwartz (1999).

They consider that research on transfer has provided us with a window on the value of different learning experiences (p. 62). That is, our assessment of learning should be based on measures of transfer rather than memory. They also expanded on Broudy's (1977) concept of "knowing with", that is, 'by knowing with our cumulative set of knowledge and experiences, we perceive, interpret, and judge situations based on our past experiences' (p. 12).

My understanding of transfer has been greatly influenced and transformed by the work of Beach (1999; 2003). His work has resolved the basic contradictions in the earlier work of cognitive researchers who described transfer as if it is the learning and not the learner who is crossing across different context. It is, therefore, largely the understandings which come from a study of the work of consequential transitions and of polycontextual boundary crossing which provide a theoretical basis for this thesis in terms of how transfer is understood by the participants.

Beach (1999; 2003) identifies six problem areas with the metaphor of the transfer of learning, that is:
1. transfer defines a narrow and isolated aspect of learning
2. transfer has an agency problem
3. transfer is no different than "just plain learning"
4. transfer environments are assumed to be static
5. transfer assumes a "launch" model of person-environment relations (that is, earlier learning determines the trajectory of later learning
6. transfer is difficult to intentionally facilitate.
(paraphrased from Beach 1999, pp. 107-110)

By moving away from the metaphor of transfer to the metaphor of consequential transition (pp. 110-111), Beach also disposes of two unnecessary distinctions which are associated with the transfer metaphor, that is, transfer at the task level and transfer at the level of larger forms of social organisation; and intentional from unintentional transfer (p. 110). He did this by first redefining the process as generalisation, which he defined as 'the continuity and transformation of knowledge, skill and identity across various forms of social organization' (p. 112). His definition recognises that 'learners and social organisations exist in a recursive and mutually constitutional relation to one another across time' (p. 111).

This generalisation process is not an abstraction as it is obtained without decontextualisation (Van Oers 1998, p. 136). Such generalisation requires systems of artefacts to:
> create continuities and transformations through social situations. The process of generalization and systems of artefacts weave together changing individuals and social organizations. … [this] can involve transformation, the construction of new knowledge, identities, ways of knowing, and new positionings of oneself in the world. They are consequential for the individual and are developmental in nature, located in the changing relations between individuals and social activities.
> (Beach 1999, p.113)

This developmental and transformational concept of transfer links situated learning (Lave and Wenger 1991), later work on communities of practice (Wenger 1998; 2002; Wenger; McDermott and Snyder 2002), human activity systems (Engeström 1987; Vygotsky 1978) and expansive learning (Engeström 1999a; 1999b).

The responses made by the research participants gave strong support to the concept of significant transitions and on generalisation through embedding contexts. They provided a basis for the argument that the metaphor of transfer needs to be replaced by that of significant transitions (Beach 1999, p. 12). That is, when individuals cross contextual boundaries, there are significant experiences which need to be reflected upon, in both an anticipatory and a retrospective sense, in order to understand, and ascribe meaning to, the new situation. This process of meaning-making constructs our identities, both as a learner and a worker. It is a two-way process – when an individual moves in to a new context, both the individual and the context will significantly change. Individuals need to recognise and be proactive with their agency in this process, in order to empower themselves as active members of their new community of practice. Their learning, as a response of the change process their boundary-crossing has initiated, moves from being peripheral to integral as they seek and gain membership of the workplace community.

Four types of consequential transition are identified by Beach, that is:
> … lateral, collateral, encompassing and mediational. Lateral and collateral transitions involve persons moving between pre-existing social activities. Encompassing and mediational transitions have people moving within the boundaries of a single activity or into the creation of a new activity.
> (Beach 1999, p. 114)

The stage 2 participants provided, through their "stories", examples of the four types of consequential transitions identified by Beach: lateral, collateral, encompassing and mediational. 'Lateral transitions occur when an individual moves between two historically related activities in a single direction' (1999, p. 114). This type of unidirectional movement was the most common type of transition described by the participants. For example, one participant described his experience in mentoring a younger friend over a period of twenty-one years when he wrote:
> Marc started teaching in 1974 and spent the next 21 years as a classroom teacher of maths and chemistry. His teaching career as a subject co-ordinator, level co-ordinator, curriculum co-ordinator, house master and designer of school timetables mirrored mine to a large extent. He was a brilliant teacher and tutor but not formally promoted in the Government system. With a Ph.D in Chemistry and Honours in Mathematics, he was exceptionally qualified in comparison with other teachers in government secondary schools.
> (s2p061)

'Collateral transitions involve individuals' relatively simultaneous participation in two or more historically related activities' (Beach 1999, p. 115). For example, one participant traced a significant series of consequential transitions which moved from school student to self-employed architect when she wrote:
> This transfer and movement is over a long time, being 1968 – 1984, mostly as a single mother. During this time I moved from being an interior design student (art student) to working in a restaurant (waiting, cooking & finances), designing crafts for weekly magazines, church organist, engineering draftswoman, architectural

draftswoman, building supervisor, architectural student and, finally, qualified architect.

All of the experiences and scenarios provided greater reference points upon which to refer to the designing of spatial configurations and the understanding of the building process. The skills were theoretical, physical (= drafting), emotional and social. Architecture encompasses all of life and so no learning experience is wasted.
(s2p011)

Many of the stages outlined above were collateral transitions: being an interior design student; working in a restaurant; and designing crafts for weekly magazines all occurred concomitantly. These changes also show that collateral transitions often run counter to societal notions of development. For example, the participant repeatedly gained qualifications in one sphere, for example in building and construction and then returned to study architecture whilst working as a professional building supervisor.

Examples of collateral transitions from participants were only described by women participants, and were often concerned with enrichment and challenge, rather than being directly concerned with their working trajectories. In a second example of a collateral transition, one of the participants described her movement from working as a potter to writing TAFE[1] curriculum when she wrote:

I was a potter. My core business was throwing pots on the wheel, decorating them, firing them and selling them. I designed and developed my own range of pottery researching appropriate glazes and firing techniques. Additionally however I took on projects that interested me. I built a pottery studio with a friend and received a grant to assist. I wrote articles on pottery for craft magazines. I was on a project working group that established a large arts centre in Melbourne. I assisted in large events organised for that arts centre and I ran workshops for the community. I also taught pottery to Aboriginals rehabilitating from drug and alcohol abuse, unemployed people, children and a talented autistic person. I worked collaboratively with other artists. I communicated effectively with a large range of people.

Then one day I turned around and decided that I needed to earn a lot more money and decided to look for a well paid job. I successfully landed a temporary job writing curriculum for TAFE. I was appointed to a permanent position as an accreditation officer with the State Training Authority soon after. Someone explained the idea of transferable skills to me and that is the basis on which I successfully made such a dramatic change.
(s2p022)

It is interesting that this participant gave the details of these collateral transitions only as background to the move she understood as transfer - that is, the lateral transition from working as a potter to writing TAFE curriculum. Yet this significant move was underpinned by her experience in collateral transitions and the crossing of contextual boundaries on a day-to-day basis.

'Encompassing transitions occur within the boundaries of a social activity that is itself changing. ... Like lateral transitions, encompassing transitions involve a clear notion of progress, although it is associated with the direction taken by the changing activity

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[1]   TAFE is the acronym for Technical and Further Training which, in Australia, is the public arm of the vocational education and training activity.

rather than the direction of the individual moving between activities' (Beach 1999, p. 117). One example of an encompassing transition is the following account of a change in role within the same workplace. The participant relating this wrote:

> I'm reflecting on the situation of the training administrator who joined me in the training section of the industry association. Prior to her taking on this new role she had been working in an administrative/secretarial role in another section of the industry association and moved into the training function as a completely new role. She had to learn about the training activities, provide advice and assistance to members inquiring about courses, undertake all the electronic setting up and formatting of information as well as being able to enrol participants in courses, provide confirmation of their enrolment, ensure they were appropriately invoiced, etc .
>
> In this situation, the work functions are changed which means that new skills and knowledge will, in all likelihood, be needed. In addition, although the work context may superficially remain the same, it has changed insofar as the person's relationship with that context has changed and, therefore, how he or she experiences that context, has also changed.
> (s2p012)

'Mediational transitions occur within educational activities that project or simulate involvement in an activity yet to be fully experienced' (Beach 1999, p. 118). Most of the stories told about expected situations of transfer might be described as mediated transitions. For example, a new retiree wrote:

> This might sound crazy, but I have found the need to mentor myself into meaningful retirement – as there is no-one else to assist me.
>
> As I have recently retired, I have proactively gone out to acquire new skills/knowledge, namely in the arts/history fields so that I might broaden my knowledge/appreciation base for the world I live in. In addition, I have recognised the need to develop skills in some areas to prepare me for a purposeful retirement e.g. learning to bowl (even though I feel that I am not quite ready).
> (s2p015)

Our learning from these consequential transitions, arises from the social, cognitive and emotional tensions (Illeris 2002, p. 18) which are a necessary consequence of our boundary crossing and subsequent activities. This learning is situated in three ways, that is, practically; in the culture of the occupation and/or the workplace; and in the social world (adapted from Evans and Rainbird 2002, pp. 17-18).

The stage 1 participants identified these three aspects of transfer within their responses. As one of them said:

> There's the work we do, the people we work with and the culture of the place – how we do, and feel about, things around here. They are all involved – it's not that one is more important than the others.
> (s1p13)

Similarly, the stage 2 participants recognised the 'three integrated dimensions of the learning process' (Illeris 2002, p. 20) which was generated by intercontextual boundary crossing. Van Oers' process of continuous progressive recontextualising (1998, p. 141) was recognised by a number of respondents in terms of the exploration of and comparison of contexts to find the degree of "fit". This enables the embedding

of the old context in the new and is not, in Van Oers' view, an infrequent activity which only occurs when crossing contextual boundaries but one which is occurring on a continuous basis as we interact with our environment and our learning is mediated by the artefacts we use to manage social change.

The transfer, or recontextualisation, of knowledge and skills from one activity to another requires socio-cultural and ideological learning. As Rogoff and her colleagues wrote:

> … children extract sociocultural knowledge by discerning variations and commonalities across activities as they attend to the ordinary, repeated practices of care givers that are systematically linked to economic and political practices.
> (Rogoff; Radziszewska and Masiello 1995, p. 129)

Dyson's (1999) writing is based on observations of developing literacy skills in young children. She argues that it is not how children apply previous learning to new learning but, rather, 'how they assume new roles and responsibilities within ever evolving activities' (p. 156). She argues that much of the scaffolding or support currently given to learners is premised on the intention of the activity rather than recognising that 'interaction is both situated within and constitutive of events' (p. 156).

This means that supporting the transfer process, or the consequential transitions across work contexts, requires more than simply making sure that the boundary crossers have the necessary technical skill to do their assigned jobs. It requires support in identifying variations and commonalities in the activities involved and the context in which such activities are situated. In addition, it requires proactively enabling workplace learners to assume new roles and responsibilities as they learn through interaction with the workplace context.

The questionnaire, used in stage 2 of the research, included a question on patterning within the group of items concerned with the initial internalisation of learning or enactment. Most of the participants acknowledged that the recognition of similarities is an important part of learning. However, just over half of the participants believed that patterning would result in only superficial learning unless it was accompanied by a conscious search for difference. Thus as one participant wrote:

> I think that patterned behaviour is important, but mainly insofar as it throws into sharp relief the differences between the new and the old situations and, as you suggest above, provides a base to be seen to be doing the right thing while you are trying to find out what it should be, e.g. the strategy of checking out what experts in the field do.
> (s2p018)

Thus enactment becomes the process of trial and error, based on one's initial assessment of variations and commonalities, until it is possible to embed the activities and the contexts within each other. As a result of this process, it is the differences which are significant. Thus boundary crossers need to recognise that patterns 'are dynamic and they, [the learners], have the power to change them' (s2p041), and that they 'can lead to complacency and the failure to appreciate the newness of a situation' (s2p071).

On the other hand, unless learners 'use reflection to significantly unpack the way that they pattern the response … they are not able to interact with changing environments rapidly' (sp2041). Other negative aspects on a reliance on patterning included 'being influenced by the behaviour of the workplace group and thus failing to learn deeply and thus be able to adapt and innovate' (s2p038); and substituting patterning for learning and, thus, failing to come to terms with difference, diversity, ambiguity and uncertainty. This means that they are 'not able to deal with contingency; an everyday occurrence in the workplace' (s2p052).

These ideas are supported by the work of Marton and Booth (1997) who argue that learning results from experience and our awareness of that experience. They write:

> Our prime interest is in the *variation* in the ways in which people are capable of experiencing various situations or phenomena. This variation reflects *differences* in what aspects of the situation or phenomena are discerned and simultaneously focal in awareness. By *aspect* we mean a dimension of variation – that which, once set in focus and no longer taken for granted, becomes potentially open to variation in awareness. If you become aware that something *is* in a certain way, then you also become aware that it *could be* in some other way.
> (p. 207)

In Marton and Booth's work, the term "awareness" is used to denote the learner's way of seeing, experiencing, handling and understanding various aspects of the world. In that sense it is used in a much more active sense than its more common use. Our awareness is the product of our learning and directs our actions and is the rationale of our evolving roles and responsibilities.

Conclusion

Rethinking transfer is just the beginning of a change in the way we view learning as thoughtful interaction. The research showed that the perceptions of practitioners, based on their practice and experience, have already begun to embrace these ideas in response to the changing social worlds they inhabit.

This paper has only just touched the surface of the concepts which are commensurate with a change in thinking about transfer and its implications for teaching and learning practice. Rethinking the concept of generalisation is also important, as is the understanding of the demands and processes of polycontextuality. It is imperative that such ideas are researched, disseminated and adopted into everyday educational practice if we are to meet the challenges of learning and working within a knowledge society.

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