Mobile work based learning up close and personal

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Abstract. Mobile learning is about knowing and understanding how to use everyday life worlds as learning spaces. The increased capacity, capability and functionality of mobile technologies mean that support, instruction, collaboration, communication and assessment of and evaluation for learning, can happen anytime, anyplace. Work based mobile learning is an emergent paradigm of lifelong learning, which has two perspectives, one associated with the concept of time and biographical learning, education in the life span and one set in a social dimension in a global context of biographicity. Thus, the work based mobile learning process should enable students to engage collaboratively with others and communicate to share and transfer knowledge across different learning contexts and learning spaces. The author is developing a 2010/11 pilot module (work based mobile learning) requiring learners to record, review and reflect on work based learning activities hosted in an immersive virtual workplace. Learners' interactions with the virtual workplace will be mediated with a mobile device on which they are able to create personal biographical records of their learning. This paper seeks to highlight and review some of the key issues associated with the design of the module.

Keywords: mobile, biographical, lifelong, work based learning.

Introduction

There is a growing demand for employability learning to be addressed within the curriculum from students, employers and the government (BIS, 2009, CBI, 2009). Currently, the Higher Education Academy (2009) define work based learning (WBL) as "a process for recognising, creating and applying knowledge through, for and at work which forms part or all of a higher education qualification." [http://www.engsc.ac.uk/er/wbl/index.asp].

In the BIS Higher Ambitions report, Lord Mandelson suggests that "without employability skills: several important strands in UK employment and skills policy may be unachievable" (BIS, 2009, pp.4). He goes on to explain that Universities have a responsibility through knowledge generation and stewardship to prepare our people for the world of modern work. Thus, work based learning is a model of learning which Universities are increasingly recognising as important to their curriculum provision.

Changing modes of delivery and the recognition of technology enhanced learning as a pedagogical approach which can enhance learning is leading to new innovative pilots in HE sector and other sectors (Traxler, 2008). The reason studies of actual use of mobile devices in learning is important is explained by Conole & Dyke (2004). They explain that the ways in which meaning is attributed to technologies is based on the perception of what a particular technology makes possible/disallows. Thus the impact/effectiveness of mobile technologies to support learning is highly contextual, associated with tutor and learner characteristics and

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preferences, the pedagogical approach employed, the organisation of the learning environment as well as the omnipresent disciplinary and institutional culture and norms (Kennewell, 2001).

Winters (2006) theorises mobile learning as any form of learning when mediated through a mobile device. The fundamental distinction between learning and mobile learning is the use of a mobile device to mediate learning. The use of mobile technology as a mediating tool enables learning experiences to be captured, discussed and reflected on as part of convergent or divergent assessment activities any time, any place in an array of situational contexts. Hall (2009) explains that mobile technologies can be used to connect students' informal and formal learning. Mobile learning can be spontaneous, personal, informal, contextual, formal, ubiquitous and pervasive (Kukulska-Hulme & Traxler, 2005). Outside the classroom, the use of mobile devices offers more opportunities for learning and students have increased choice in where, how and when they learn.

The heterogeneity, complexity (Braidotti, 2001) and super-complexity (Barnett, 2000a; 2000b) of everyday life worlds as learning spaces, means geographies of learning are being reconfigured all the time. The author seeks to explore the design of a new geography of learning brought into existence by the virtualisation of a workplace, to consider how, with virtualisation, the "space and time of learning as a lived experience" (Ellsworth, 2005, pp.17) and consider to what extent virtualization impacts on learners' ability to adopt agency of their biographical learning in the context of a new pilot module (mobile work based learning).

The author seeks to consider ways in which the transformative potential of mobile technologies can be used to enable lifelong learners to use everyday life worlds as learning spaces. In addition to this, she seeks to consider how virtualisation of the workplace impacts on the process and design of learning activities.

The impact of virtualisation of the workplace and its impact on learners' interactions and adoption of agency in determining learning which is relevant to them is personal, highly contextualized and will originate within a micro-sociological theory of practice. It is this notion that Tarde (1899) refers to as "everything in the world of facts proceeds from small to great" (pp.111). Hence, it is the context of practice and not general laws influencing these interactions. It is for this reason that the author is going to use a case study (pilot module) to illustrate some of the issues of 'mobile work based learning up close and personal'.

The design of the module enables a mobile device to be used to bridge formal and informal learning spaces and provide a connectivity of place to the virtual workplace. Tacit knowledge gained by students through learning activities and informal learning is made explicit through the process of reflection. The module creates an opportunities for learners to choose when, where and how they learn. It offers a personalized, immersive learning experience in which the learner adopts agency of their learning. However, this approach has pedagogical implications in terms of the geography and ownership of learning and constructive alignment (Biggs, 1996) of learning and teaching activities with assessment.

It is these pedagogical implications arising from a new geography of learning that the author seeks to refer to in this paper.

Work based mobile learning

The author views learning as a process of cognitive and social development (Vygotsky, 1978) in which social interaction is mediated by cultural tools, such as language and technology, Vavoula and Sharples (2002) explain learning can be mobile in terms of space i.e. happening in the workplace or at home. They explain that learning can be mobile between different areas of life e.g. relating to work demands, self improvement and that learning happens at different

times of the day, working days, weekends etc. Sangster et al (2000) state, "work based learning perceives learning as a continuous process grounded in experience"(pp.50).

Although the diversity of models of learning in HE has led to an increasing interest in work based learning, it has been theorised as a model of learning for over 40 years. Pedler (1974) explains that for work based learning to be effective the student must be at the centre of the learning experience. A work based learning approach examines what the learner is doing in the workplace i.e. output orientation and appropriate academic theories to work place activities' analysis in order to attain better understanding (Portwood & Garnett, 1995).

Work based learning answers the calls for an integration of knowledge with experience (Beck, 1992; Raelin & Schermerhorn, 1994) and thus narrows the gap between theory and practice. Work based learning enables the 'transformation of experience' (Kolb, 1984). However, the knowledge developed in the workplace is often tacit, being categorized as practical and situationally specific (Eraut, 1992; Maclure & Norris, 1991). Studies in this area have referred to the inseparable and implicit nature of learning at work and the importance of tacit knowledge gained in the workplace. Tacit knowledge is an abstract, complex ideology but the author proposes that it is simply knowledge that is unspoken but understood.

Tacit knowledge is acquired via informal learning interactions and is not always acknowledged consciously by the learner. Rogers (2006) likens informal learning to breathing and explains that informal learning is ... "seen as a natural activity which continues at all times; it is highly individualised, contextualised" pp.4. Tacit knowledge is deeply rooted in cognitive and spatial interactions and influences personal attributes, values and beliefs, perceptions and behavioural norms. That is an unconscious psychology of learning that the learner becomes aware of through the process of discussion and reflection. Jarvis (2006) suggests in essence learning always occurs in a social context.

The design and intended learning outcomes of the pilot module recognizes the significance and importance of personalized, biographical learning twinned with learning in a social context. This means creating opportunities where learners understand their personal development needs and goals, in and outside formal learning settings. Learners become engaged with and immersed in their learning when they gain self reflective understanding of what they have learned and have yet to learn. Their interactions in and with the virtual workplace and the effectiveness of how these interactions are managed is integral to extent to which learners are immersed, but more importantly gain knowledge and understanding.

Biographical learning

Learning in one's life-world is personal and contextual. Learning occurs as a result of an interaction process between the learner and their environment which is influenced by and inter-dependent with cognitive thought, value and beliefs, conation, social constructions, culture, prior knowledge and personal frames of reference.

Learning how to learn is in essence the strategy and tools of a 'lifelong learner' Houle (1969) who explains that this is what individuals need to facilitate continuous learning a range of contexts. Iterative deployment of these strategies and tools in life-world contexts over continuous time and space, leads to better understanding and sense making of learners' learning and knowledge. Continuous learning across a range of informal and formal learning contexts is a challenging experience for learners. The value of learning is appropriated in relation to personal definitions of relevance where learners are constantly creating their own contexts of and for learning.

Alheit & Dausien (2002) define biographical learning as, "a self-willed auto poetic accomplishment on the part of active subjects in which they reflectively organize their experience in such a way that they generate personal coherence , identity and a meaning to their life history and a communicable socially viable life-world perspective for guiding their actions" (pp.17).

Self reflexive understandings

The author recognizes that embodied interaction is central to the review and evaluation of the design of a virtual workplace. Context is not stable, but arises from situated learning activities engaged in by involving both technological and socio-cultural resources by which learners are enabled to engage agentively.

Mobile devices can be used to encourage learners to act agentively in deciding the relevance of their learning experiences in different life worlds. Hence, a dialectic relationship emerges between self-reflexive understandings and perceptually subjective life worlds (Schütz, 1967). The subjectivity of every day life worlds coupled with micro socio-cultural conditions and constraints of learners' perception, willingness and ability to use the affordances of mobile technologies for learning creates the personal context and embodiment of learning experienced in different ways, at different times by learners. The affordances of mobile technologies for biographical learning are wholly dependant on relational context.

One of the issues raised in this paper is the impact that virtualization has on the interactions between learners themselves and their learning environment. Castells (2001; 2010) provides a historical account of the 'complex matrix of interaction' between social forces and technological change originates from media/technological convergence and the ubiquitous nature of technology which has produced an information age in which 'the diffusion of technology endlessly amplifies the power of technology, as it becomes appropriated and defined by its users' (Castells, 2010, pp.31). De Certeau's (1984) explains the sociology of everyday life; 'focuses on the heterogeneity of 'disseminated practice' (pp.188) in which passive consumers become active 'users', 'makers' and 'unrecognized producers' (pp.xvii).

The experience and engagement of personalised self-reflexive understandings through an action-cycle of learning (Schon, 1967) is an integral aspect of learning and is central to the intended learning outcomes of the pilot module. Action learning is a complex cognitive process, involving the application of sense-making through perception, value and beliefs etc in an ever-changing life-world, where learner is constantly mediating their position and connections with the perceptually subjectivity of everyday life. The product of these self-reflexive understandings is knowledge.

However, Jameson (1991) argues that the challenge to and indeterminacy of knowledge is a central feature of contemporary social life, as technology enables information which is not valid or credible to be made available, resulting in a profileration of knowledge frameworks. However, there is now widespread adoption of technologies which promote virtual learning and the author's orientation towards virtual technology is a pragmatic and optimistic one, grounded in a view of complex cultural & social practice.

A case of virtualization: work based mobile learning

Virtualisation of the learning experience

Silva (2009) explains that virtualization is a technological process which connects all of the components utilized in delivering an application over the network, and includes the process of making all pieces of an application work together regardless of where those pieces physically reside. The author takes the view that virtualization gives users an opportunity to access information and services remotely. Virtualisation creates an opportunity for students to engage in practices which have a transformative effect on their learning. This transformative effect impacts on spatiality, pedagogic and learning interactions, knowledge production and learner/tutor roles and identity.

The pilot module has been approved and is currently being developed as a module for Level 6 Business studies students (n = 20). The model of learning for the module has a mix of mentorship from a real employer (n = 4) and university based mentor (n =1) with autonomous learning undertaken in spaces chosen by the student. Learners will work collaboratively in 5 member action sets, in the capacity of defined team roles but will create a personalized record of their learning.

Learners will use the virtual space to access learning activities, engage in discussions, communicate with mentors etc. However, they accord value to their biographical learning journey experience by recording, reflecting and reviewing self-reflective artifacts of learning created using the functionalities of their mobile device. These self reflective artifacts are organized by the learner into an e-portfolio to evidence their biographical learning journey and used for assessment.

The module has been conceptualized as an alternative learning experience for students who are unable (for a variety of reasons) to undertake an optional one year "real life" placement. The virtualization of the workplace enables students to engage with authentic learning to solve real world problems in a variety of situational contexts whilst providing a supportive learning environment. Savin-Bade (2008) notes that multiple knowledge is made possible in virtual immersive worlds as space is open for knowledge reconstruction and contestation across time and space.

The Global Positioning project by Leeds University used virtual virtualization to develop 'nugget contents' iteratively and collaboratively which were reusable within and between institutions and made freely available via online repositories (Durham and Arrell, 2007, pp.796). The ethos of the work based learning module in case is aligned with this objective. The researcher intends to collaborate with a variety of stakeholders; employers, placement staff, students, alumni etc. to develop re-usable learning objects which can be developed and disseminated collaboratively.

Reusable learning objects e.g. audio files, video content, podcasts, presentation slides etc are being sourced or developed for use in the virtual workplace for learners to access. In addition to this, spaces for collaboration, discussion, privacy etc are being creat. Virtualisation enables the creation of different spaces for different purposes to be accessed via a portal. Also, importantly, resources and information from spaces outside the virtual space can be embedded within the space. In practice this means that the virtual learning space will have links to relevant and supplementary information which the collaborators feel is credible, valid and value adding to learners' learning experiences.

Formal and informal learning spaces

The work based mobile learning module is hosted in the University virtual learning environment (VLE) called X-Stream (a version of Blackboard) and is currently being designed in partnership with local employers and employability stakeholders. The VLE is a virtualization of a workplace with formal and informal learning spaces. The formal learning spaces e.g. office space, virtual filing cabinet, meeting room are rule bound, hierarchal and controlled by the mentor and/or employer. The informal spaces e.g. chat room, brainstorming room, social network area are what Deleuze & Guattari (1987) conceptualise as 'smooth space,' which are discursive, virtual and related on a continuum of conductivity, flux and immersion (Massumi, 1992, 5-6) which allows for transformation and change of spatial relations.

Supervision and mentoring throughout the module takes place largely in the virtual workplace, through virtual communication, although there is some physical interaction at the beginning, during and at the end of the module. Virtual communication will take a number of forms; email, virtual filing cabinets and social spaces in the VLE, discussion forums, video links, web-conferencing and periodic skype calls. However, learners will meet each other face to face at a social event before commencement of the module and engaging in virtual communication online.

Virtualisation of the workplace reduces the spatial isolation experienced by students who are employed on "real life" placements, who are geographically isolated from their peers. Virtualisation enables learners to connect with each other in group discussions and during collaborative learning activities. The use of virtual communication e.g. web conferencing, online discussion boards, intends to push away temporal boundaries, structures of geographical proximity and a change in the dynamic of pedagogic relations and learner interactions. However, the compression of time and space can lead to time discourse and issues with expectations.

Learning activities

Learning activities on the module are periodic learning activities modelled on a real life business problem proposed by an employer. The learning activities are action and enquiry based and pushed out on a selective release via a formal learning space in the VLE. They will take the form of multi-media/digital outputs, so that they are reusable and re-purposeful.

The learning activities will have strict deadlines for completion, although learners can choose to complete them anywhere, at any time. Learners will be sent reminders of periodic tasks and meetings via SMS on their mobile devices and important dates will be posted to the calendar board in the VLE, which can be synchronized with personal mobile devices.

Learners will be moved into and through a diverse range of learning activities and processes in which collaboration and review with peers will develop learners' self confidence in virtual and discursive learning spaces, where they will be supported by each other and their mentor and/or employer. Learners will collaborate with other peers within their team and access information from the VLE. Learners will also be encouraged to access information outside the virtual workplace as part of their learning. It is intended that all learners will become knowledge producers.

The author believes that contemporary society and recognized changes in teaching practice acknowledges the 'proliferation of knowledge frameworks,' this is evidenced by the growth of wikis. Giddens (1991) suggests that this is a characteristic of 'late modernity' whilst Lyotard (1994) refers to this as our 'incredulity towards meta narratives.' However, it is important that learners are recognized as credible knowledge producers. The author abandons the notion of

elite knowledge production, but retains the view that the tutor should facilitate, steer and validate learning and knowledge production. This raises important questions about learner/tutor role and interactions

Assessment

Learners will be formatively assessed via the completion of periodic work related tasks which they reflect on progressively via blogs and reflections of individual artifacts of learning. Learners will be assessed summatively on the validity and achievement of learning outcomes and competencies evidenced by the self organized, completed e-portfolio. A competency framework will underpin the assessment for learning frame which will match competencies/learning outcomes with examples of artifacts that learners can create and reflect on to evidence their development/ achievement. Validity of learners' development in accordance with the assessment for learning frame will be achieved when all the competencies on ticked off by the learner, have been agreed by the employer and mentor.

Students will adopt agency in deciding what learning is relevant to what they want to say about themselves and what they have learned and experienced, through the self organisation of their learning artifacts. However, self organization of the artifacts of learning will be scaffolded by an e-portfolio system increasingly used in the sector called PebblePad.

There is an assumption that the learner will be 'self willed', 'active' and 'auto poetic in recording, reflecting on and reviewing their learning experiences and creating their biographical records of learning. However, the virtualization of the workplace and absence of physical interaction between learners and mentors means that there is a heightened need to address pedagogical issues in order to enable a quality learning experience.

Pedagogical issues

Ethics - participation and equity

Mobile devices allow students to access and store all sorts of knowledge almost instantly. Mobile devices with internet access use the web as a medium where user generated content is promoted and learners have a voice via blogs, wikis etc. In addition to this, learners can capture images, sounds data and voice themselves on their mobile devices and reflect on events as they happen specific to where and when they happen. Mobile students are able to create access and publish information about everyday life-worlds in which they live as students, friends, members of families etc. They can distribute functional information via contacts, calendars, tasks, notes etc. or more intimate information via social networking sites such as Facebook or Twitter.

Choice and control can be exercised on a purely personal level and a problem faced by the author is to how to encourage participation and engagement amongst learners and a feeling that their personal world of knowledge can be shared with other peers who may not be their friends and authoritative figures e.g. mentor and/or employer.

The author aims to address this issue through several means – firstly ensuring that all students on the modules have web enabled personal mobile devices. It is important that students have an unqualified acceptance of the device that they use, so for this reason students will use their own personal devices that they are familiar with and happy to use.

All mobile devices will be installed with Facebook mobile and PebblePad PDA (e-portfolio software) as well as Windows mobile (in order to synchronise calendar & outlook). The author

will clearly and explicitly demark the virtual workplace in terms of formal and informal learning spaces.

However, the author will publish weekly "socials", collaborative weekly tasks which involve learners sharing personal (but not sensitive) information e.g. hobbies, sporting achievements etc with each other in a bid to progressively break down any barriers that may exist between learners in their virtual community of learning.

The other important measure will be to fomalise the sharing of learners' personal worlds of knowledge through their e-portfolio which is assessed, thus removing learners' power of choice. Learners may choose not to share their self-reflective artifacts of learning with their peers progressively through the module (though they will all be published to a Gateway that the mentor/employer will be able to access). However, they will be required to share their e-portfolios at the end of the module, with their peers and other communities of learning in a showcasing event to be attended by all employers and teams on the module.

Role dislocation

The proliferation of situational, personal tacit information through the virtualization of the learning environment, as well as the process of learning and reflection means that the tutor's role becomes one of support and guidance. This is one of the reasons why all learners will have a mentor available to them for advice and support. It is hoped that as the student learns and develops (s)he will become more active agents and experts in their role. Steel and Hudson (2001) explain that a reconfiguration of the tutor's role to one of guides and facilitators of learning, often results in tutors feeling a sense of dislocation from traditional perceptions about their authority and expertise.

Practioners of work based learning become dislocated (Edwards and Usher, 2001) as learners' personal and professional lives integrate and learning becomes borderless. It becomes imperative that formal learning spaces are rule bound and hierarchal, with a clear code of conduct and practice that is communicated formally to learners. This is the reason why the workplace is hosted via the X-Stream and not on a remote website, as students expectations will be aligned with that of other formal modules, despite the life world being a virtual workplace rather than a University module repository of information.

The mentor could be exposed to learning and discussion that has taken place in and outside the formal learning spaces of the workplace, through the informal learning spaces. Although all learning is personal and deeply rooted in cognitive, social interactions, learning in a 'smooth space' (Deleuze & Guattar, 1987) that is not rule bound means that the mentor may be exposed to discussions between learners and their peers which may not reflect the beliefs, interpretations or perceptions of the learners not viewed by themselves. Thus, informal learning spaces will be monitored periodically for cyber bullying by an unconnected person e.g. an administrator to ensure that everyday accepted societal norms apply and this person will intervene in online conversations if necessary. However, students will be permitted to discuss with each other openly and without formal constraints and rules.

Virtual isolation

A new geography of learning in a virtual learning context can lead to issues with learner identity, interactions and engagement. Schostak (2002) describes this as 'the vulnerable sense of depth, unfathomableness, the existential "I" behind the eyes' (pp.41). Lave and Wenger (1991) explain that central to the learning process is participation in activities which fosters and is fostered by socialization within a community of practice.

Shilling's (2000) notion of 'emotional effervescence' theorises notions of academic identity and engagement in relation to virtual activities. Kerawalla et al., (2008) research findings showed that students used blogs for various purposes including creating shared resource and support networks. Thus, though the issues of 'emotional effervescence' and virtual isolation are real and pertinent issues in some cases, in others, virtual spaces can be used to promote participation and facilitate community building within learning groups. Nevertheless, regardless of context, all virtual communities of learning need be supported.

Digital skills of learners

The virtualization of the learning environment means that for students to be engaged and participate effectively in virtual communities of learning, they must possess digital communication skills. This means both a willingness and capability to use technology to communicate with each other in a virtual learning environment. In the case in point, learners will access the virtual workplace using mobile technologies, which themselves require a level of capability and willingness in use to be effective mediating tools of learning.

Review of the literature suggests that the majority of students who engage with mobile technologies are of the "Net Generation," the ideology of which, Jones & Cross (2009) explain, are students born after 1983. Tapscott (2008) argues that young people are different to previous cohorts because of their experiences of networked and digital technologies.

Oblinger & Oblinger (2005) state, "although these trends are described in generational terms, age may be less important than exposure to technology" (2.9, pp. 20). It is this difference in understanding that allows for older students to have different approaches based on their exposure to new technologies. Prensky (2009) conceptualises exposure to new technologies in the terms 'Digital Natives' and 'Digital immigrants'.

Selwyn's study of UK students (2008) agreed that the new generation of learners were no more homogenous than previous generations and pointed to the continued existence of gender differences. There is increasing empirical evidence that suggests caution in defining a new generation of students in relation to their exposure to digital and networked technology. JISC/MORI 2008 report that there is evidence of a small but significant minority of students who do not actively engage with information communication technology. Hence, it is important not to over-generalise and make inappropriate assumptions in relation to engagement of students and mobile work based learning, especially with the increasing emphasis on lifelong learning and mature students returning to Higher Education.

Students on the module will be a heterogeneous population of learners (n=20) with a mix of age, gender, economic and social background and importantly, exposure to technology. Learners will need to apply to the module and will be accepted onto the module via a recruitment and selection process. Learners will be successful on the basis of an application form and video, demonstrating an ability and willingness to engage with and further develop digital technology and reflection skills. Once on the module, all learners will be provided with training and support by a computing services officer.

Time discourse

Adam and Groves (2007) explain the time discourse emergent through mobile device use as a displacement of time rather than a replacement of time as 'embedded, embodied and contextual and point to a simultaneity rather than dichotomy of time. Selvin (2008, p115) states that virtualization reconfigures spatiality, in that with technology, learning is becoming vastly more decentred as well as all-embracing compared with what went before. Teaching and

learning can happen at any time and in any place. Which of course may be convenient for the learner but not for the tutor.

Fortunati (2002) explains that the mechanical representation of time is more and more unacceptable at a social level. We currently live and work, in an age of immediacy in terms of communication and information. Informal learning spaces are open, borderless spaces without constraint. In practice what this means is that there can be a blurring of protocols and acceptability of behavioral norms and expectations in formal learning environments.

Learners are constantly attempting to mediate their position in everyday spaces, but discourse can emerge when personalized mediating tools of communication and connection are used in formal learning spaces. Thus an important consideration in pedagogical design is how to minimize the discourse which emerges from time and space compression.

Learners will be made aware that office hours apply in the virtual workplace and tutors/mentors will not be available to answer queries or offer support outside these hours. A clear workplace rules mandate will be issued in the module handbook outlining the rules of the workplace, as well as indicating that informal learning spaces in the workplace will be monitored, although not rule bound.

Censorship

Though learners will have ownership of devices that they have unqualified acceptance of, an understanding of what is appropriate in terms of what is shared in formal learning spaces will be outlined in the workplace rules posted in the VLE and made available in the module handbook.

Content populated in the formal learning environments e.g. brainstorming threads, mind-maps, MP3 files etc. in the workplace will have to be created in accordance with the assessment for learning frame. Virtual communication in informal spaces will be facilitated by tools and applications made available only in the VLE, for example in the chat room of the virtual workplace.

Learners will be instructed to communicate with each other via these tools and use will be monitored by an unconnected person e.g. administrator. This is in a bid to provide some objectivity in the evaluation of dialogue and acceptable behaviours, as the mentor and/or employer will no doubt be influenced by their involvement in supporting learners in the module. However, information and content (offensive, sensitive etc) that is accessed outside the VLE via the learners' own personal mobile device and not evidenced in the virtual workplace (in which case the mentor or unconnected person would intervene) will remain the authority and responsibility of the learner.

Conclusion

In recent times constructive alignment (Biggs, ibid) has extended beyond its constructivist learning premise to incorporate settings influencing learning, curriculum aims and design, learning and teaching activities, learning support, assessment and feedback, course management, students background, knowledge and aspirations (McCune and Hounsell, 2005; Hounsell and Hounsell, 2007). Hardy et al (2009) explain that the interaction between these factors and the quality of students' learning is termed, 'congruence.'

Congruence is a challenge facing all practioners of learning and assessment design. The virtualisation of a learning environment and absence of physical boundaries means that there

is a heightened need for pedagogical issues to be addressed. It is important that the learning environment is regarded as a valid and safe learning environment.

The open space of the virtual workplace is beneficial in terms of access to learning objects and learning experiences. It enables a wide range of students who might otherwise not have access to work based learning and create a variety of situational contexts in which the learner is supported. However, virtualization impacts on learner identity, interactions, pedagogic role and the process of knowledge production.

In order to achieve congruence on this module, it is recognised that technology has the scope to promote constructivist modes of learning in which student participation and creativity play an important role. Thus, assessment for learning encourages that creativity and participation whilst providing a frame which scaffolds how participation is evidenced and seeks to provide some ethical boundaries for knowledge production.

In this paper, virtualisation is considered in a transformative form, where the affordances of mobile technology use for biographical learning are wholly dependant on relational context and interactions between the learner and their learning environments whether, real or virtual. Some of the key pedagogical issues discussed in this paper arise because of the lack of boundaries within virtual learning spaces. However these are issues which can be managed with careful planning and well thought out interventions.

In virtual learning settings, choice of engagement and control are legitimate powers of the learner, but it is the tutor who should act as gatekeeper of formal learning spaces and retain control through explicit rules and hierarchal structures. In the case of the pilot module, control of the virtualized learning environment is retained by the mentor, yet learners are encouraged to be 'self-willed, 'auto-poetic', 'active' agents of their learning. In doing so, learners are immersed in their learning and develop self reflective understanding of their own personal learning.

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