**Three interpretations of authentic learning and their implicit assumptions about university student learning and motivation**  
  
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One interpretation of authentic learning builds on the assumption that when learning is situated in the context in which it will ultimately be applied, students will see its relevance and importance, will be more motivated to learn, and will ultimately have a better chance of transferring their knowledge outside the classroom. Brown, Collins and Duguid’s (1989) concept of situated cognition and aspects of Lave and Wenger’s (1991) ideas about student participation in communities of practice are consistent with this, however, it can be challenging to implement these kinds of authentic learning experiences in formal settings (Stein, Isaacs & Andrews, 2004) and in university settings, many undergraduate subjects service students from a range of courses, creating numerous possible professional contexts and making it difficult to situate learning in a genuine community of practice relevant to the future career directions of all students.  
  
A second interpretation of authentic learning focuses on the tasks themselves (as distinct from the context in which they are carried out). Herrington, Reeves, Oliver and Woo (2004) argue that investigation activities that mirror the ill-structured and often open-ended nature of real-life tasks can be authentic even if not necessarily situated in a professional context. The idea of generative learning environments proposed by the Cognition and Technology Group at Vanderbilt (1990) draws on this aspect of authenticity, as does Lebow and Wager’s (1994) idea of cognitive apprenticeship. In undergraduate science education, for example, one approach might be to design tasks that involve authentic scientific inquiry; for example, conducting experiments or undertaking fieldwork to collect data for an investigation that emulates the sort of scientific inquiry conducted by researchers in that discipline. However, students who do not see themselves as ultimately becoming scientists (for example those studying a service subject towards a professional qualification) may not be engaged by simulated research tasks.  
  
A third interpretation focuses on the idea of making learning personally meaningful to students. Stein, Issacs and Andrews (2004) argue that learning experiences may be authentic if they “engage students’ lived experiences” and help them to “find meaningful connections with their current views, understandings and experiences” without necessarily being situated within a community of practice (p. 240). The design of learning activities through which students build connections between their formal knowledge and their personal experiences (Linn, Davis & Eylon, 2004; Vavoula, Sharples, Rudman, Lonsdale & Meek, 2007) would be consistent with this. Such activities might be situated within students’ “real lives” outside of university rather than within a particular professional context. In biology, for example, it is common practice to ask students to go into their everyday environments and collect biological specimens. Leonardo da Vinci’s experiments where he dropped objects of various sizes and masses from the leaning tower of Pisa is an age-old example from physics, and many teachers have asked students to carry out similar experiments themselves. Tasks requiring students to undertake simple chemistry experiments in their kitchens at home provide another example (see, for example, Boschmann, 2003).  
  
An interesting angle on these three interpretations is the implicit assumptions within each. The first assumes that students are focussed on their future careers and will be motivated by activities undertaken within this context. There are question marks about this assumption, at least for undergraduate school leavers, although it may be more true for working postgraduates or mature-age students. The first interpretation also has implicit within it assumptions about the nature of transfer, that is, that transfer is more likely if the information is somehow anchored to an experience undertaken in a context similar to the one in which it will be applied, while the second interpretation assumes that the context is less important than the cognitive nature of the task (see Gregor’s section of the symposium for a discussion of this tension). The third interpretation assumes that students need personal relevance in order to be motivated to learn. This assumption was brought into question by our Net Gen image-sharing study which suggested that for some students their motivation was more towards the assessment in the subject than personal relevance, and thus constructive alignment between learning outcomes, learning activities and assessment may have been more important than personal meaningfulness.

**Some unresolved issues about authentic learning and assessment and their implications for open and distance education**

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Authentic activities seek to link students’ learning to performance in real-life situations. The importance of authenticity is especially apparent in open and distance education settings, to which learners typically bring a wealth of experience, abilities, enterprise and resources gained from their personal and professional lives. In my presentation I will encourage participants to consider more deeply what authenticity in learning and assessment constitutes, and what commitments must be made educationally in taking its value seriously. As part of this I will discuss a number of unresolved issues and challenges surrounding the area and their implications for open and distance education. In particular, I will argue that the concept of authenticity is essentially relative in nature, and must be evaluated with reference to a given target context. For open and distance learners, their own personal and professional contexts often provide rich opportunities for authentic activities that are relevant and meaningful to them, yet higher educators frequently fail to appropriately capitalise on these opportunities and instead favour fictional scenarios and artificial simulations that, despite possibly drawing on authentic sources, are far removed from the source context itself. While exhibiting many qualities characteristic of student-centred, situated learning, and in many cases problem-based and anchored learning, such applications tend to cite ‘authentic learning’ as rationale but rely heavily on the ‘suspension of disbelief’ (see Herrington, Oliver & Reeves, 2003), which suggests they are dependent on imagination and fantasy – this appears to run counter to the goal of connecting students with the real world that so defines authentic learning.

The need to define a target context for the purposes of authentic learning and assessment leads to the question of who should be responsible for deciding on the context, or in other words, who should be the judge of the point of reference against which the authenticity of a task is to be evaluated. Ultimately, what is deemed relevant is dependent on individual perceptions; what students see as relevant is not necessarily the same as what their peers, educators and professional discipline see as relevant. Since the concept of authenticity assumes a constructivist perspective, which emphasises personal meaning making and stresses the role of the learner as the chief knowledge architect, it is difficult to reconcile how in striving for ‘authentic’ learning it is acceptable to push one particular view of what is meaningful and relevant in the world. As with other concepts, the meaning of authenticity is constructed in the mind of the individual learner, and cannot be specified unilaterally by educators and then imposed on all learners. With tertiary open and distance learners, this concern becomes even more profound and pronounced, given the considerable life and work experience these learners often already possess.

It is my contention that in striving to promote learning that is meaningful and relevant to students’ professional and personal lives, the notion of ‘creating an authentic environment’, whether online or in a face-to-face teaching situation, is somewhat of a misnomer, a contradiction in terms. So-called ‘authentic’ environments that are created or contrived represent the teacher’s or designer’s view of the world, a one-size-fits-all version of reality that is assumed to be meaningful and relevant to all learners. While such synthetic environments may have tremendous value in terms of their effectiveness in meeting specific curricular aims and learning objectives, they cannot simply be said to be ‘authentic’ – returning to the earlier point of authenticity being a relative concept, these environments promote learning that is only authentic *relative to* artificially crafted, biased abstractions of the ‘real world’. Once again, this is especially unsatisfactory for working distance learners who demand that learning and assessment be closely tied to their own unique experiences and circumstances. Furthermore, not only do learners’ perceptions of what is authentic depend on myriad factors and variables including but not limited to their background and prior learning, they are also dynamic and will inevitably change in multifarious and unpredictable ways throughout the course of a learning intervention. It is insufficient to address these perceptions as static constructs, and solely during the learning design and development phases. For learning and assessment to be authentic to learners’ contexts, they must be afforded the flexibility to allow their perceptions to form and take shape as the learning process unfolds, along with the autonomy to find personal meaning and relevance in their individual learning journeys as they become more knowledgeable, skilled and experienced not only as professionals in their discipline area, but also as lifelong learners. This necessitates ongoing dialogue with and between learners, to ensure they are active participants in defining authenticity.

**Authentic, media rich skins: Redundant window dressing on complex tasks … or not?**

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The concept of authentic learning is well-established in the educational literature generally and in the area of educational technology more specifically. In the educational technology arena, authenticity is often operationalised by presenting students with online approximations of ‘real-world’ tasks and activities that are carried out over hours, days or weeks. These may be presented as interactive media explorations (e.g Exploring the Nardoo, DNA explorer) or more holistic project-based activities incorporating role-play based learning designs (e.g. XXX). The activities that students undertake, it is argued, mimic those they would undertake in complex real-world settings, and as such promote the kind of cognitive and meta-cognitive processing, reasoning and understanding that will ultimately be of benefit to them.   
   
What is perhaps surprising in many of these programs is the use of media rich elements as an introduction to the educational program or task. We have all seen the virtual clinic, the virtual lab, and the virtual office, which typically are simply used as media ‘skin’ or window onto a set of authentic learning activities or tasks. In this presentation I will critique the use of these media skins. I will point to cognitive psychology research that seems to support their use in facilitating the factual recall of information. But I will also question whether this research warrants the use of media skins, given the expense typically associated with their development and given that, as educators, we are more interested in the complex tasks behind the window.

**Authentic learning in 3D virtual environments: Issues and challenges**

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If you look at the Second Life website, you will learn that ‘Anything is possible in Second Life.’ There are gorgeous images of luxuriant forests, and scantily clad dancers sashaying across a parquet floor. The Eiffel Tower – or rather a virtual replica of it - looms large on your screen and before the image transitions to that of a young woman, her outfit changing from glamorous eveningwear to that of a mercenary. For an educator, the possibilities are tantalising. What better way to train an architect than to let him or her design and construct a building; walk around in it when completed and then go back and correct any deficiencies or experiment with alternatives? A prospective surgeon will learn best by performing surgery on a patient that cannot die and a student of history will appreciate and more fully understand historical events if for just an hour or two they could take on a role and wander around a battleground or participate in a significant legal trial. There are many educators responsive to these needs, endeavouring to give their students the most authentic learning experiences possible. Participation could decrease reaction times, improve hand-eye coordination and raise learners’ self-esteem. There’s a common perception among educators, that this kind of authentic learning can be successfully accommodated within 3D virtual environments such as Second Life.

Although there is great fanfare about the potential of three-dimensional immersive spaces for application to higher education, there are still significant shortcomings in the available technologies that need to be addressed to reliably harness that potential. For example, even though an avatar can be directed to perform just about any feat from complex surgery, to sky diving or underground mining in a virtual environment, does the execution of that task sufficiently resemble its real life counterpart to constitute authentic learning?

This presentation will examine the limitations of 3D virtual environments for providing authentic learning contexts. These include lack of haptic feedback, inappropriate sensory feedback, and difficulties associated with movement mediated through a keyboard and mouse.