

Employing the new educational technologists: A call for evidenced change

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Flexible technology-enhanced learning environments, both educationally and institutionally are key enablers for delivering efficient mass higher education. Educational technologists make significant contributions to the development and organisational embedding of such environments. Their emerging role is complex as it requires current knowledge and skills in learning and teaching, management and information technology. Given the strategic importance of the contributions that educational technologists now make to their institutions, we propose an international program of empirical research to analyse current issues and future trajectories relating to their aspirations, careers, management and organisational locations.

Keywords: educational technologists, flexible learning, management, organisational structure

Introduction

“Somewhere there’s a *place* for us.” (Leonard Bernstein and Stephen Sondheim)

Within the Organisation for Economic Co-operation and Development (OECD) countries, higher education (HE) policy is influenced by political stakeholders, viewing mass access to tertiary education as an major contributor to the fostering of knowledge societies (Organisation for Economic Co-operation and Development, 2005; Trow, 2006). In turn, information and communications technology (ICT) is seen as an engine for the dynamic creativity underlying knowledge economies (see Oakley, 1997; Laurillard 2002; Clegg *et al.*, 2003; Organisation for Economic Co-operation and Development, 2005; Trow, 2000; Brown *et al.*, 2007; Browne and Shurville, 2007). Accordingly, ICT-driven HE business models—ranging from flexible learning (Chen, 2003) to fully virtual universities (Hanna, 1998; Roberts and Webster, 2002)—seem to have transcended fashion (Pratt, 2005) to become part of HEs ‘ubiquitous’ fabric (Stiles and York, 2006). However, while research suggests that institutions which do not implement strategic approaches to ICT and technology enhanced learning (TEL) will become vulnerable (Moser, 2007b), as Cowan comments “if we are frank with ourselves, [such strategies] have not been strongly evident in the approach of many of our institutions” (Cowan, 2008 p 758; see also Shurville and Browne, 2006a, 2006b).

For example, in a recent survey, Duderstadt *et al.* (2003) reported that institutional strategy is lagging behind ICT-driven innovation within HE. They recommend that “university leaders should recognise that the rapid evolution of ICT will stimulate indeed, demand a process of strategic transformation in their institutions” (Duderstadt *et al.*, 2003, p 50). They also noted that that “the employment relations between academic institutions and their faculty will become ever more complex” (2003, p 49). Here we suggest that university leaders should also consider the complexities of the new roles of academic-related/professional staff that support ICT and TEL while working in what Evaline (2004) terms ‘the ivory basement’. In particular we suggest that one of the major innovations in human resources management now required of HE is the re-examination of the role of educational technologists. Given the new centrality of this role, which we describe below, we advocate that institutions investigate sustainable

career- and organisational structures for educational technologists. We suggest that such activities will help to ensure effective and appropriate institutional deployment of TEL. Our thesis is that senior managers require evidence to inform such reflection on appropriate policies. Our paper contextualises the requirement for such evidence and proposes a research initiative.

Approach: Grounded theory and lived experience

Our arguments are grounded in the relatively small body of literature devoted to this issue, much of which we have cited here (for more details please see Oliver *et al.* (2004), Oliver's Research Observatory Wiki (n.d.) and Moser (2007b) which presents qualitative evidence from three American universities in a format aimed at the German and Swiss sector. In addition Browne and Shurville collectively bring several decades of practice as both academics and leaders of TEL projects in HE, including the instigation of an institutional TEL strategy within a UK university (Browne *et al.*, 2003; Shurville and Williams, 2005; Luckin *et al.*, 2006). Browne has also contributed to national TEL projects and surveys in the UK (Browne *et al.*, 2006; Browne *et al.*, 2008). Both Browne and Shurville have now left educational technology roles for more evaluative and academic roles within UK and Australian higher education, but their 'lived' professional experience (Hodgson and Cicmil, 2006) contextualises the arguments presented here. This experience is complemented by Whitaker's extensive background and expertise in international human resource management and specifically the management of scientific and technical staff in the private and public sectors. Whitaker is designing evidence gathering strategies grounded in human resource management techniques.

Drivers for the transformation of educational technologists

We believe that widespread adoption of flexible learning is a major cause of the transformation of the educational technologist's role and its becoming of strategic importance. We have identified two drivers for universities to adopt flexible learning. First, in a globally competitive and commercialised HE market (Smith and Oliver, 2000; Bok, 2003; Attwood and Gill, 2008)—shaped by the political forces we mentioned in our introduction—there has been a considerable acceleration of the trend for HE institutions to increase access to education while simultaneously reducing costs¹ (Seddon and Angus, 2000; Evaline, 2004; Herbst, 2007). Second, educational theorists and policy makers alike are promoting student-centered learning styles, including active, collaborative, enquiry-based, independent and work-based learning (Browne and Shurville, 2007; Browne *et al.*, 2008; Shurville and Brown, in press). Both drivers have led institutions to adopt flexible learning which "... expands choice on what, when, where and how people learn. It supports different styles of learning, including e-learning. Flexibility means anticipating, and responding to, the ever-changing needs and expectations of vocational education and training clients – enterprises, learners and communities." (Australian Government Department of Education, Science and Training, 2005). Flexible learning should provide "students with flexible access to learning experiences in terms of at least one of the following: *time, place, pace, learning style, content, assessment and pathways*" (Chen, 2003, p 25). By analogy, HE institutions are responding ever more to a student-centered model, arguably incorporating an industrial model of flexibility and quality where "the 'winners' design 'customised' products and services 'on time', 'on demand' faster and more perfectly than their global competition, or they go out of business" (Gee *et al.*, 1996, p 6).

Assuming that HE institutions cannot find a way to 'trade out' of providing mass access to tertiary education via flexible education, e.g. via endowment, the industrial model suggests three main strategies for producing affordable products without necessarily reducing quality² by, for example, increasing class sizes (Kokkelenberg *et al.*, 2008): (1) reducing labour costs through casualisation, off-shoring and outsourcing, (2) transforming institutions by upgrading business processes and ICT/TEL and (3) increasing research income.

Although Evaline (2004) and others have explored some consequences of the labour cost reduction strategy, we believe that much research remains to be done in this area. Increasing research income is investigated by Bok (2003). Here we will focus upon the e-transformational strategy, which has recently been shown to produce realistic improvements in the order of 3.3% across all Australian universities—with a range of 1.8% to 13.0%—(Worthington and Lee, 2008).

Well-designed and implemented TEL *can* be a key enabler for delivery of flexible education (see Conole and Oliver, 2006) and it *can* help institutions to implement personalisation (Leadbetter, 2004). However, TEL has been widely (and perhaps naively) perceived as a means to reduce the cost of mass teaching (see Roberts, 1993; Laurillard, 2007) when it can actually be more expensive and labour intensive to

implement than traditional approaches (Guri-Rosenblit, 2005). Nevertheless, in Browne and Shurville's experience, institution-wide approaches to supporting TEL can provide opportunities for economies of scale and centrally managed educational technologists can provide a cost effective resource for change management, development of materials, and training and support of academics (Browne *et. al.*, 2003; Shurville and Owens, in press). This view is also supported by Moser's recent American case studies (2007b).

Cost is not the only reason to prefer *institutional* educational technology services—offering expertise in education and technology—over the grass roots approaches personified by 'Fred in the Shed' and the 'Lone Ranger' (Stiles and York, 2006). Critics of flexible learning and TEL contend that the design of courses with a high TEL content can be overly driven by technology rather than educational advances or ways to deliver anticipated learning outcomes (Turnbull and Macnamara, 2003). Laurillard stresses that '[learning] design has to be generated from the learning objectives and aspirations of the course, rather than from the capability of the technology' (Laurillard, 2002, p 22). Designing effective flexible learning experiences mediated by TEL requires pedagogically sound methodologies that map learning outcomes through to content, materials, assessments and mediating technologies (Scott, *et. al.*, 2007). Consequently professionals need to develop systems that deliver both educational and institutional flexibility: "Educationally flexible systems should enable educators to design and manage effective learning experiences and materials and provide interfaces that are appropriate for educating. Meanwhile they should provide students with opportunities to learn at their convenience and provide an interface dedicated to learning. Institutionally flexible systems should provide institutions and their developers with facilities to adapt and integrate the product with local administrative processes, IT platforms and teaching culture. They should also help universities to join effective federations and partnerships with other institutions, which requires adherence to open standards and tolerance of diverse coding languages and platforms." (Shurville *et. al.*, 2008, p 76).

Embedding such systems at an institutional level brings requirements for senior managers with soft skills, including change and innovation management (Benson and Palaskas, 2006; Shurville and Browne, 2006a; Stiles and York, 2006; Moser, 2007a). Maintaining such systems requires skills in service management (Office of Government Commerce, 2001) which are broadly akin to those of a head of a university's information technology service.

An example of a new and growing arena of competency now required of educational technologists to implement blended flexible learning is in estates management, performing a pivotal role in the creation of technology-rich learning spaces that can encourage collaborative, research-led learning (Brewster and Hamilton, 2008; Joint Information Systems Committee, 2008).

Educational technologists are therefore undergoing transformations in their skill sets and their centrality to institutional strategy; but as yet, in Browne and Shurville's experience, the importance of these transformations appears under recognised in terms of career stability and progression in both Australia and the UK.

Employing the new educational technologists

For over thirty years, HE has attempted to harness educational benefits from ICT by employing educational technologists (see Lawless and Kirkwood, 1976; Harris, 1977). The *Association for Educational Communications and Technology* has defined educational technologists as a profession "concerned with the design, development, utilisation, management, and evaluation of processes and resources for learning" (Seels and Richey, 1994, p 1). Until recently, educational technologists typically operated in small scale and close knit academic communities, where they researched and developed educational technologies while engaging in academic staff development and support (Epper, and Bates 2001; Oliver, 2002, 2003). Now, as we have described, political, environmental, social and technical pressures compel institutions to seek wide-scale efficiencies and flexibilities by applying ICT (McCredie, 2003), while simultaneously improving learning and teaching outcomes (Roberts, 2008). So the cottage industry of educational technology is transforming into a profession whose members need to deliver institutional systems for TEL.

Three decades have now passed since the role of educational technologist emerged (see Lawless and Kirkwood, 1976; Harris, 1977). What has happened to all the staff employed under such a label? Many, because of the fixed-term nature of many contracts and limited career potential have had to respond to such uncertainty by re-orientating their careers. A minority of educational technologists have managed to retain some primacy in this expertise whilst also obtaining more senior posts. In Browne and Shurville's

direct and indirect experience, the organisational setting for educational technologists can be precarious and these senior educational technologists can still lack equivalent status with managers of more established services when competing for institutional resources. So senior educational technologists can represent significant flight risks for their institutions as their frustrations can make them prone to moving into academic or more mainstream academic-related/ professional positions.

Creating, introducing and maintaining effective educational and institutional systems require specialist knowledge of education, educational management and technology which is hard to acquire and update. The practice of HE is continuously informed by advances in educational theory and by internal and external policy initiatives. Hence educational institutions routinely adopt and introduce new approaches in learning and teaching (Barnett, 2003), such as, enquiry based learning (see Centre for Excellence in Enquiry-Based Learning, 2007), which need to be accommodated and mediated by institutional educational technologies. TEL itself can be adopted on the basis of a fashionable trend rather than a well-researched business or pedagogic case (Pratt, 2005). As the recent rise of Web2.0 illustrates, the technologies that mediate flexible learning are continuously evolving in bouts of creative destruction (Schumpeter, 1942; Stiles, 2007). Meanwhile industrial dynamics implies that certain technologies and products will be mainstreamed while others are discarded (Marsili, 2001; Beatty and Ulasewicz, 2006; Browne, *et. al.*, 2006). For example, a recent survey of TEL in the UK found that “Blackboard continues as the most used enterprise or institutional VLE. However, when also including VLEs that are used more locally, e.g. within departments, then Moodle is most used with a rapid rise since 2005. Overall, there is a vastly reduced range of VLEs in use since 2005. ... The tools that have increased significantly in prominence are those for podcasting, e-portfolios, e-assessment, blogs and wikis” (Browne *et.al.*, 2008, p 2). Continuous professional development is therefore becoming increasingly important to educational technologists. Being research active is a means of being at the disciplinary forefront. However, as we will discuss below, this can bring its own problems.

The cost for universities of employing experts with up-to-date knowledge of both education and technology is certainly a key issue. Barley and Kunda (2004) suggest that itinerant gurus who can keep pace with such changing knowledge are prohibitively expensive. Moreover, in Browne and Shurville’s experience, local knowledge and carefully nurtured social networks of contacts are essential for smooth embedding and maintenance of TEL services (see Shurville and Williams, 2005; Luckin *et. al.*, 2006) and such informal interchange is often the lifeblood of their personal development. This experience is supported by the same UK survey noted above which emphasised that “a *committed local champion* continues to be the strongest influence on the rate at which TEL is developed and processes promoted within an institution” (Browne *et. al.*, 2008, p 7). The importance of educational technologists being embedded in local social networks argues against adopting the labour cost reduction strategy i.e. casualisation, off shoring and outsourcing of educational technologists; yet it does place a pressure on the potential cost of retaining such staff. So, in the face of high costs and stakes, senior managers and human resource managers need to look for ways to recruit, train, manage and retain educational technologists with a broad skill set that would be appealing to industrial employers (and hence extremely poachable). We believe that this issue needs to be addressed via a combination of career structure, management style, organisational design and reward.

The increasingly diverse roles of educational technologists are proving problematic when attempting to determine both their contractual status and structural locationⁱⁱⁱ. Educational technologists have incredibly varied skills and necessarily span the academic and professional divide (Beetham *et. al.*, 2001). Therefore familiar management styles and standard terms and conditions, such as academic and academic-related or professional, and particularly the somewhat demeaning ‘support’ rarely suit them. They also tend to emerge from disparate backgrounds and face highly uncertain career paths (Oliver, *et. al.*, 2004; Browne *et. al.*, 2008). Inappropriate deployment and inadequate staff development can have severe implications for retention, performance and advancement into more strategic roles. Moreover, academic-related or professional educational technologists are often research active, which can contribute to credibility, knowledge and revenue. However departments paying levies for support services can perceive research activity by ‘support staff’ as a luxury. In Browne and Shurville’s experience, the costed inclusion of educational technologists to externally-funded research bids is often inadmissible and, even when it is permitted, their engagement can be considered a distraction from their service-oriented organisational imperatives.

While the transformation from experienced ‘techie’ to ‘accidental project manager’ is routine in many industries, it can be problematic for the individual and the organisation (Ensworth, 2001). The key role of project manager can be offered to educational technologists prematurely without the necessary experience or training (see Oliver *et. al.*, 2004).). Moreover, educational technologists can be charged with the role of

project manager without access to the necessary coercive, legitimate or reward power (French and Raven, 1960) that comes with the job title. For example, in the late 1990s at an ancient British university, one of us was asked to project manage an externally funded (US\$500,000) e-learning project while operating with the job title of learning technologist. The senior academic staff involved in the project did not appear to recognise that the job title of learning technologist defined a legitimate and substantive role. Subsequent experience in the e-learning industry, where the job title of project manager was appropriately designated, indicated that both academic partners and technical staff understood and respected the title. Such errors within universities can cause educational technologists to reconsider their career path. Senior managers and human resource managers need to consider whether the role descriptions for the new educational technologists in their own institutional setting should be biased towards educational, managerial or technical skills, with corresponding sets of terms and conditions.

In the UK there is an attempt to accredit educational technologists through the Certified Membership of the Association for Learning Technology (CMALT). However the CMALT qualification has yet to achieve critical mass or even a full appreciation of its relevance. Indeed, the professionalisation of educational technologists is still at an immature level although alternative paths to recognition lie in professional membership of organisations such as the British Computer Society (BCS) and the British Higher Education Academy (HEA). Nevertheless, membership of professional organisations is relatively low in the UK compared to Australia and North America (MacLean and Scott, 2007) where organisations such as the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE) and the Association for Educational Communications and Technology (AECT) in the USA are well established. Would an international professional body akin to the Project Management Institute (PMI) help educational technologists to achieve internationally recognised professional status and support international labour mobility akin to that enjoyed by academics and ICT professionals? However, we should note that this change might not suit employers. Nevertheless, we suggest that senior managers should consider mandatory staff development programmes for new educational technologists - to match those which are often required of new academics - leading to professional recognition and mutual expectations of continuing professional development (Nicholls, 2001).

Creating roles and job descriptions for senior managers of TEL development teams is a specific problem that emerges from the issues in interdisciplinarity, organisational structure and professionalisation that we have discussed (see Moser, 2007a). When designing such roles, managers need to consider the existing organisational structure and available resources to determine how to accommodate new senior staff and at what level of seniority and in which location. They also need to weigh the prevailing institutional culture against the amount of autonomy and support that a senior manager of TEL systems will require. They may decide that a programme of cultural change will be needed to head off organisational conflict. The job description itself should be comparable to similar positions in competing universities. It merits repetition that the main problem is balancing educational and technical knowledge and skills against management skills. Creating such roles also brings requirements for personal transformation by senior educational technologists. It is common for senior educational technologists to have achieved a reputation and hence a senior position due to their involvement in the development of a particular theory or a particular educational technology. Once such senior educational technologists are asked to lead an institutional service it can be hard for them to abandon allegiance to that particular theory or educational technology and undertake a more pluralist approach to educational technology (Shurville, Greener, Rospigliosi, 2008)..

When locating TEL teams within the organisation, senior managers need to weigh the pros and cons of creating a TEL unit against embedding members of the team within an existing service or a decoupled departmental structure (see Nunan *et. al.*, 2000). In the UK, for example, multiple approaches are taken - "Support for TEL is provided by a wide range of units. There is a differentiation of roles within the different support units ranging from technical support to pedagogic support. Of the different types of support units post-92 institutions have larger Education Development Units with greater numbers of academically oriented support staff. Pre-92 institutions appear to provide more support locally suggesting a more devolved provision." (Browne, *et. al.*, 2008, p 7). Each of these approaches brings perceived biases towards either pedagogy or technology, which can affect credibility (see Armitage *et. al.*, 2004) and voluntary uptake of services by academics. Browne and Shurville's direct and indirect experience of managing educational technology services in HE indicates that: introducing a dedicated unit can bring opportunities for both empire building and organisational conflict and can also duplicate administrative roles and costs; adding TEL to an existing service requires careful change management as it can be hard for some services to accommodate an interdisciplinary culture; diffusing educational technologists across the organisation means that activity is aligned to the diverse and particular needs of different disciplines while risking counter-cultures developing against a university-wide ethos, business processes and

technology platform; independent departmental implementations of educational technologies can be seen and managed as unwanted outbreaks or opportunities for innovation and renewal; in today's culture of ever increasing auditing, quality needs to be ensured and local educational technologists may require objective scrutiny from a central unit or a peer in another academic department; matrix and federal structures show promise but these carry high management overheads and can create further opportunities for conflict.

Whatever organisational structure is adopted, it is important for the stakeholders to consider how appropriate synergies can be facilitated, most particularly between the educational technologists and academics and that such synergies are created on the basis of equality (Browne, 1999; Hannan, 2005). However, academic equality in this context is often seen through the prism of whether both parties are credible researchers and as noted earlier, such a role for the educational technologist is often not encouraged by the institution, with service delivery being shortsightedly promoted in isolation from any underpinning theoretical creativity (Armitage, *et. al.*, 2004). A central question for senior managers to consider is whether, due to the diversity of disciplinary behaviour, TEL can have an institutional common ground at all? Yet in a mature organisation, seeking identifiable branding as well as economies of scale, some funding and infrastructure invariably has to be centrally provided. This remains a common source of tension in many institutions.

Further research

Given the multidisciplinary nature of the profession and the varied paths to entry, it is unsurprising that educational technologists are found in very different locations within institutions and that their job descriptions vary considerably. There is little published evidence of these locations and job descriptions. Likewise, little is known about the background and qualifications of existing educational technologists (MacLean and Scott, 2007 is an exception). In 1999, a limited UK snapshot was undertaken (Rothery and Jenkins, 1999) but an updated and wide scale study is needed. The outcomes of such research could be a valuable input into strategic workforce planning for educational technologists across the sector. Some clues can be gleaned from a number of tangentially related surveys conducted in the UK in 2001, 2003 and 2005 by the Universities and Colleges Information Systems Association (UCISA) (Browne *et. al.*, 2006). A more recent survey conducted by Browne *et. al.* (2008) has further developed this longitudinal analysis. It confirms a very wide spread of job descriptions, job titles and organisational settings for the broad profession of educational technologist.

We believe that further research is needed to catalogue and evaluate the range of development opportunities, terms and conditions and organisational structures currently offered to educational technologists in the Australian and UK contexts. Common ingredients for job evaluations include analysis of staff diaries and timesheets, interviews with incumbents, their subordinates and supervisors and, rarely, interviews with clients and customers (Brannick and Levine, 2002). We are therefore preparing structured questionnaires for educational technologists, senior educational technologists, senior university managers, and other stakeholders, including academics, academic-related and professional staff, policy makers and students. We are also approaching a group of educational technologists and their managers to keep reflective diaries of their activities. We will ask our recipients to compare their current role descriptions with their perceptions of the environmental, market and technological factors that will influence future performance in the role and suggest beneficial and realistic changes to these role descriptions. Finally, we intend to interview educational technologists who like, Browne and Shurville, have moved on from the field both to discover the factors that influenced this decision and their new destinations.

Conclusion: A call for evidenced change

Institutions are beginning to grapple with the significant cultural and structural changes necessary to firmly embed technological innovation within mainstream education as part of their overall mission (Shurville and Browne, 2006a) both in terms of vision and in terms of connecting multiple institutional strategies (Browne *et. al.*, 2003). However, development, placement and recognition of educational technologists and especially senior educational technologists with mandates to both initiate and shape policy and manage change programmes is embryonic. Addressing this issue is, we have argued, a major challenge in managing the transition to leveraging ICT and TEL to offer flexible mass access to affordable and high quality tertiary education as envisaged by the OECD. Having identified the issues, we recommend that further evidence of the current and envisaged roles for educational technologists is a prerequisite for sustaining change.

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ⁱ Cost sharing, i.e. the transfer of fees from tax payers to consumers, is a familiar economic strategy for universities (Johnson, 2004), which has probably influenced the uptake of flexible learning by universities.

ⁱⁱ Groccia and Miller, (2007) discuss the Baldrige Framework, which measures institutional improvement across seven dimensions of leadership; strategic planning; student, stakeholder and market focus; measurement, analysis and knowledge management; faculty and staff focus; process management; and organizational performance results, and provide case studies of improvements to U.S. institutions.

ⁱⁱⁱ See Baer (2002) for discussion of such issues in the context of public/private partnerships. See Netteland *et. al.* (2007) for a case study set in a large industrial organization.