

Supporting Learning Technology: Relationships With Research and Theory

Susan Armitage¹, Mark Bryson¹, Linda Creanor², Carole Higgison³,
Martin Jenkins⁴, Neil Ringan⁵, Barbara Newland⁶, Deborah Prescott⁷ and
Hennie Yip¹

Lancaster University¹, Glasgow Caledonian University², Bradford University³,
Gloucestershire University⁴, Bolton Institute⁵, Bournemouth University⁶,
Liverpool University⁷

s.armitage@lancaster.ac.uk, m.bryson@lancaster.ac.uk, l.creanor@gcal.ac.uk,
c.higgison@bradford.ac.uk, mjenkins@glos.ac.uk, n.s.ringan@bolton.ac.uk,
bnewland@bournemouth.ac.uk, d.prescott@liverpool.ac.uk, h.yip@lancaster.ac.uk

ABSTRACT

This paper focuses on the experiences of a group of learning technology practitioners (the Sandpiper group) faced with the challenge of supporting effective use of learning technologies in institutions. The paper begins with summary of where learning technologists have come from and where they are now. Strategies employed by learning technologists in supporting their own development and practice, as well as that of others, as part of their role are then discussed. The tensions between learning technology practitioners and their relationship to research and theory, which is seen as a key resource to be drawn upon to inform practice, are explored. The paper will conclude by proposing ways in which learning technology practitioners could inform and be informed by research and theory.

Keywords

Continuing professional development, support, learning technologists, research, theory, practice.

INTRODUCTION

Experience of learning technology staff until recently, tends to be that of working with early adopters of learning technologies. When working with relatively low numbers of early adopters, it is possible to have collaborative, one-to-one or direct course-team level involvement in the adoption and integration of learning technologies such as Virtual Learning Environments (VLEs) (Rothery & Jenkins, 1999, Oliver, 2002). Increasing numbers of academic staff are using VLEs to support teaching and learning (Browne, 2003). Managing this increase, without a commensurate increase in support posts, means that the approaches used with early adopters are not scalable. Alternatives need to be explored and new strategies adopted (Armitage & O'Leary, 2003).

As part of a National Teaching Fellowship Scheme (NTFS) project a series of informal peer workshops have been organized (the participants at these workshops are referred to in this paper as the "Sandpiper group"). At the first of these workshops, this issue of working with increasing numbers of staff was identified as a key area of concern and was labeled "Managing the Majority". Several members of the Sandpiper group have looked to the literature and research evidence to suggest ways forward. However, research into this issue is still in its infancy. There is limited research evidence or theoretical underpinning that can be drawn on to support the work of the learning technology practitioner.

Discussions at the NTFS workshop raised wider issues regarding the role and context of learning technology practitioners and their relationship to the research and theory that informs this field of work and this forms the focus of this paper.

LEARNING TECHNOLOGISTS: THE CURRENT POSITION

The emergence of the role of the learning technologist has been from many different and varied backgrounds. The development of Internet and communication based technologies in recent years means that technology has become a serious strategic issue in supporting learning and teaching (Jenkins & Hanson, 2003). The US Web-based Education Commission (WEC) stated “The question is no longer if the Internet can be used to transform learning in new and powerful ways. The Commission has found that it can.” (WEC, 2001). The government’s desire to increase student numbers in UK Higher Education, widen participation and develop lifelong learners, as set out in the white paper on the future of Higher Education (<http://www.dfes.gov.uk/highereducation/hestrategy/>), is a key national driver for the use of e-learning. Government initiatives; for example, the Learning and Teaching Support Network ([LTSN, www.ltsn.ac.uk](http://www.ltsn.ac.uk)); the new Higher Education Academy (<http://www.heacademy.ac.uk>); Centres for Excellence in Teaching and Learning ([CETL, www.hefce.ac.uk/learning/TInits/cetl](http://www.hefce.ac.uk/learning/TInits/cetl)) and the UK e-University ([UKeU, www.ukeu.com](http://www.ukeu.com)) are intended to support institutions in realising these aspirations.

The current climate of technological change and national drivers for e-learning has led to the development of specific roles to harness the potential of technology in supporting learning and teaching (Oliver, 2003).

Roles

The phrase “Learning Technologist” is relatively new and within each institution there are varied definitions of a learning technologist and of what they are expected to do (Oliver, 2003, ELTI, 2003). They can be academic staff who have absorbed the role of supporting technology into their existing practice; learning support professionals such as IT or library support staff for whom this is one aspect of their support role; those for whom learning technologies is the core of their support activity (Beetham, 2001). Learning Technologists often work across the whole institution as educational brokers or as an interface between technology and pedagogy (Armitage & O’Leary, 2003). The evolution and development of technology can be at a fast pace. It is difficult to keep up with these changes and apply new technologies with good pedagogy. The sharing of good practice through networking with others in similar roles is encouraged and supported by a number of national organisations, a point that is expanded later in the paper when considering the continuing professional development of learning technologists.

Organisational structures

Sharing good practice can also help to overcome some of the organisational difficulties by providing evidence of the activities of other institutions. As the role of the learning technologist and the use of e-learning is relatively new, it has been challenging to embed e-learning in institutional strategies and highlight the need for research and funding to support these activities. This situation is slowly changing and many things are now influencing policy, for example the e-learning strategy consultation documents from the Higher Education Funding Council for England ([HEFCE, www.hefce.ac.uk](http://www.hefce.ac.uk)) and the Department for Education and Skills ([DfES, www.dfes.gov.uk](http://www.dfes.gov.uk)).

The findings from study tours, such as those organised by the Association for Learning Technology (ALT) (Boezeroy, 2002) and cross institutional visits are also influencing the current policy, but more funding and resources are needed to keep abreast of the theory, research and practice of this rapidly developing field. Learning technologists need to know what the latest theories and research findings are and where the field is progressing. Sources for this knowledge are each other, the literature and national and international communities. However, are we encouraged by our institutions to do research or does the institution foster this split between theory, research and practice in the way resources and money are allocated? This is explored further later in the paper.

Professionalisation

If institutions did have additional funding for learning technology staff, where would they come from and what qualifications would be expected? This raises the issue of qualification and professionalism for the learning technologist. Until now there has been no clear career progression or accreditation. This has been recognized by the Joint Information Systems Committee (JISC) who have funded the development and piloting of an accreditation framework aimed at learning technologists. The work is being undertaken for the Association for Learning Technology by a consortium led by Martin Oliver from University College London (<http://www.ucl.ac.uk/epd/alt-accreditation/>). Recognition of the role of learning technologists has been made at a national level by bodies such as the National Teaching Fellowship Scheme ([NTFS, www.ntfs.ac.uk](http://www.ntfs.ac.uk)), which

has awarded prizes for excellence in teaching to some in this role. The scheme has now been extended, from 2004, to have a specific category of prize for those in a learning support role, which can be seen as a clear indication of the importance of this area of work.

The current position

The activities to professionalise the role of the learning technologist, the increased national importance given to e-learning, and the embedding of learning technology into institutional strategies, suggest that this role has become more mainstream since Gornall's study of these 'new professionals' (Gornall, 1999). The next section moves on to consider the support strategies learning technologists adopt, both for themselves and the academics with whom they work.

SUPPORT STRATEGIES

As practitioners in support of learning technology developments, Learning Technologists function across many 'communities'; the loosely defined learning technology community; the academic community; the research communities; and wider institutional communities. Learning Technologists can therefore be expected to engage with and use research and theory in many different ways. As such learning technologists will at various times be required to employ different 'support strategies', to support the community they are engaged with and transfer knowledge between communities. This information is used at different levels; to support academics; to inform their own practice; and to relate to institutional strategies.

A particular challenge for learning technologists is managing the relationship between these different communities and the transference of information and knowledge. This represents the relationships between practice and the development of research and theory and the application of theory to practice. Communities of practice were identified by Wenger (Wenger, 1998). He recognised that within each community some of the identified practices become widely shared within that community, in his words '*solidifying some of those practices into artefacts (shared documents, research, products)*'. Wenger describes this as *reification*. To engage with other communities however, requires the transference of these artefacts. Such artefacts that are transferred between communities are termed 'boundary objects'. It is therefore necessary for learning technologists to be able to assimilate and use boundary objects (i.e. research from other fields) but also to be able to generate and pass on boundary objects to those engaged in using learning technology. Learning technologists therefore have an important 'brokering' role.

'The job of brokering is complex. It involves processes of translation, coordination, and alignment between perspectives. It requires enough legitimacy to influence the development of a practice, mobilize attention and address conflicting interests ... it also requires the ability to link practices by facilitating the transactions between them, and to cause learning by introducing into a practice elements of another' (p109 Wenger).

Learning technologists are working between a number of communities as identified at the start of this section and therefore have a brokering role which requires 'legitimacy'; it is important that learning technologists are in a position to have such status within each of the communities they are engaged with. This requires learning technologists to have different strategies in place; strategies to support their own practice and development; strategies to support academic staff using learning technology; and strategies to inform institutions. Each of these will require the learning technologist to be bringing together research, theory and practice. A key strategy therefore is the learning technologists own continuing professional development.

Professional Development

The field of learning technology is as yet relatively undefined (Conole, 2003). Consequently there are a number of different formal and informal networks that inform practice within the wider community. These networks enable the sharing of ideas and establishing of common ground and practice. Formal networks that exist include the ALT special interest groups; Teaching and Learning Technology Officers and Learning Technology Theory. In addition there is overlap with networks stemming from organisations such as the Centre for (CETIS), Universities and Colleges Information Systems Association (UCISA), Joint Information Systems Committee (JISC) and the Learning and Teaching Support Network (LTSN) and from the FE sector, British Educational Communications and Technology Agency (BECTa), Further Education Resources for Learning (FERL), and the National Learning Network (NLN) to name but a few.

Informal networks include regional groupings and those set up for limited periods such as the Sandpiper group. These networks will operate in different ways for example:

- ALT organise learning technology study tour activities which inform practice but not research. The findings from these tours may influence policy, which in turn may influence the research agenda.
- ALT helps to present/publish work in this area from practitioners and researchers through its annual conference, workshops, regular newsletters and journal.
- LTSN and JISC facilitate presentations, publications and regional and national events.
- Informal networks allow practice issues to be discussed and ideas exchanged.

Overall, these networks play an important role in helping learning technologists share ideas and practices; developing a common understanding within their community. Much of this exchange is based on sharing practice rather than published theory and research, for example the Learning Environments and Pedagogy case studies (LTSN Generic Centre, 2002). This may be because research in a new field lags behind practice, until the field becomes an established one (Conole, 2003). Practical experience and case studies arising from these networks are acknowledged as important sources for a learning technologist to draw upon, to inform their practice in different contexts (Oliver, 2002).

In terms of accessing academic theory and research, different strategies can be adopted by learning technologists. For example, engagement with other communities that border learning technology, in particular ALT, LTSN and the Institute for Learning and Teaching in Higher Education (ILTHE). Such engagement enhances learning technologists' academic credibility and legitimacy, as ALT, LTSN and ILTHE provide a link to other communities and the sharing of artefacts with a common understanding.

Another potential link that can be used for professional development of self and others, is for learning technologists to have an input into their institutional teaching certificate programmes; such a contribution 'requires' learning technologists to revisit the literature, so encouraging continuing professional development. Additionally learning technologists can also complete teaching certificate programmes, demonstrating their understanding of learning and teaching issues alongside academic colleagues and gaining membership of the ILTHE.

Consideration also needs to be given to whether learning technologists can benefit from interaction with specialist groups or discipline areas. Other support services provide a particular focus, such as Library staff who are also "managing the majority", and this may provide an opportunity for the exchange of practice. It is to be noted that UCISA and the Society of College, National and University Libraries (SCONUL) organised a joint event focused on the DfES e-learning consultation in January 2004 (<http://www.ucisa.ac.uk/groups/tlig/teach/elearning04.htm>). The need for collaboration is widely recognised for learning technologists. Armitage and O'Leary (op cit) identify a range of staff internal to an institution with whom a learning technologist should be working, these include: technical support staff, librarians, MIS staff, registry and exams office. Yet in these examples the focus is on practice.

Supporting Academics

A fundamental aspect of the learning technologists role is to support academic staff in their use of learning technology. This means being able to transfer 'boundary objects' into the domain of the academic; these boundary objects may come from a variety of other sources. Having academic legitimacy will help in this process so learning technologists need to demonstrate this through reference to research and theory. As highlighted above links to some external networks (ALT, LTSN, ILTHE) can help facilitate this through their publications, meetings and conferences

Involvement in institutional teaching certificate programmes provides a forum for allowing academic participants to find out about learning technologies with a pedagogical underpinning. It also helps to ensure a common language for working together with learning technologists, one of the keys to successful collaboration (Armitage & Bloxham, 1999). In terms of transferring knowledge '*research based evidence will always carry weight with the academic community*' (Armitage & O'Leary, 2003, 24). To achieve this requires learning technologists to be evaluating their own use of e-learning and making use of other published research and theory. The HEFCE e-learning consultation document also emphasised the need '*for analysing and building upon research evidence, to improve understanding*'.

Institutional strategies

The implementation of e-learning within an HEI requires significant cultural change and it is important that all '*relevant stakeholders across the institution are involved*' (Jenkins & Hanson, 2003). Armitage and O'Leary (2003) identify the following approaches to help foster strategic change:

- Identify champions
- Work through existing structures
- Write positional papers
- Use advisory groups
- Engage key stakeholders in an audit of e-learning
- Collaborate with national projects.

This list again demonstrates the need for learning technologists to work across groups and to be combining practice, research and theory and presenting it appropriately to the different audiences. The next section of this paper takes a closer look at theory and research; the learning technologists relationship with them; and how learning technologists can influence the research agenda.

THEORIES & RESEARCH

In this fast-moving area it is expected that learning technologists keep up to date with current research and theory by reading journals, joining relevant mail lists, attending and participating in e-learning conferences and maintaining a network of contacts. This is normal practice for academic staff and is viewed as an integral part of their role. In the learning technology field however, it is not always acknowledged, either through contractual conditions or through the support of line managers. Everyone in the academic world needs more time and this is no less true for learning technologists who are expected to combine the fields of education and technology in a rapidly changing world. Dedicated time for assimilating, synthesising and applying the theories is frequently superseded by the requirements of the ubiquitous service role and is only made possible through the commitment and enthusiasm of the individual (Oliver, 2002).

Nevertheless, it is the nature of the role to ensure that employing institutions benefit from national and international research in order to take advantage of innovative technologies and pedagogical approaches which will enhance both the student experience and the reputation of the institution. Bad or uninformed decision-making can have potentially disastrous effects on an institution, its staff and students, and there is a strong likelihood that time and resources will be squandered in re-inventing the wheel.

Learning Technology Practice

Whether learning technologists are research active and venture beyond an acceptance of the work of others in the field, tends to depend on their current role within the institution and future career aspirations. Further uncertainty lies in the fact that there appears to be a question over what can be viewed as legitimate academic research in this area. There is a strong shift away from the case studies of good practice, which dominated the early years, towards the notion that only pure, educationally-focused research is valid. As learning technologists have arrived in their current roles from a wide range of backgrounds, this apparently restrictive view can be a major barrier to those who would feel more comfortable with technical or practical implementations rather than theoretical approaches. This is clearly due, at least in part, to the fact that the discipline is still in its infancy and feels the need to justify itself as a legitimate research field (Conole, 2003).

Another influencing factor is the surge in VLE use within institutions (Jenkins & Browne, 2003) which has extended the role of many learning technologists beyond learning and teaching into change management and organisational politics. Whilst this provides learning technologists with the opportunity to become involved in a range of developments vital to internal progress, it can also lead to the adoption of a more generalist approach, which can be detrimental to a research focus.

The apparent divergence between research and practice appears to be positively encouraged by influential organisations such as ALT whose annual conference now has a separate research strand and whose journal gives preference to papers which have a strong theoretical underpinning and are firmly based in the research literature (see Writers' Guidelines at <http://www.tandf.co.uk/journals/authors/caltauth.asp>). Lisewski & Joyce (2003) also highlight the distinction between educational research and action research, where the former is perceived to be more widely applicable and therefore more highly regarded. The strengthening of the theoretical rationale through rigorous research in learning technology is indeed to be welcomed, but is this perhaps leaning

too far in that direction to the detriment of the dissemination of good practice as it develops? Wenger (1998) reminds us of the importance of the interaction between 'the planned and the emergent', and in order to keep abreast of the fast pace of new developments, it could be argued that there is still a place for the local case studies and small-scale evaluation studies which learning technologists are best placed to provide.

The practice of others

Learning technologists are conduits for bringing relevant research and theories to the practice of others, which means that they are often one step removed from implementing ideas themselves and are dependent on influencing the academics with whom they work. This emphasises the crucial nature of the relationships they develop with academic staff at all levels within an institution, relationships which require nurturing over a period of time (Rothery & Jenkins, 1999).

Wenger (op cit) describes the concept of the community of practice in which he describes how peripheral engagement can become central as new group members work alongside more experienced practitioners towards common goals and shared understandings. The nature of the role suggests that learning technologists require to participate simultaneously in several of these mainly informal communities or networks, including those of learning technology practitioners, groups of academics within the institution and external researchers. Playing a central role in all of these is likely to prove difficult, if not impossible, and it is inevitable that on occasion learning technologists remain on the periphery. Currently this appears to be the case with the community of researchers, in which, for whatever reason, many learning technologists do not appear to be fully participating. Nevertheless, as argued in the previous section on support strategies, learning technologists can ensure that they use this peripheral engagement to enhance their practice and that of their constituency of academics, by enabling the transfer of artefacts and practices across the boundaries of these communities. These may include theoretical models (e.g. Salmon's 5 stage model, 2000; Collis & Moonen's 4-E model, 2001), innovative educational methods (e.g training e-moderators; e-tivities) or information about new technologies and development techniques (e.g. M-learning; interoperability).

However we are reminded by Lisewski & Joyce (op cit) of the dangers inherent in merely disseminating these artefacts without adequate reflection and constructive criticism. This is necessary not only to afford appropriate application to context, but also to enhance learning technologists status as knowledgeable and reflective practitioners and to ensure the reputation of learning technology as a discipline worthy of research status. By feeding back experiences of testing innovative models in situ, learning technologists can bring a new perspective to the research agenda and ensure the flow of artefacts and practices in both directions across the boundaries of the diverse communities.

Opportunities for research

It is clear therefore that opportunities do exist for learning technologists to become involved in research at various levels, but at the same time there are barriers which might prevent them from doing so. An important part of our role is to ensure a continuous feedback loop in which practice, evaluation, research and theory are part of a cohesive whole. Unfortunately however, there are still numerous places where the loop can be broken.

Some interesting comparisons have emerged during discussions in the Sandpiper group. Some learning technologists feel like hamsters trapped in a wheel and unable to escape. The faster they run to keep up then the faster the wheel turns. Others feel like drivers of a car in which they have little control over the route as someone else is acting as the navigator. The speed of the car itself depends on external and internal influences such as Government and institutional policy. Nevertheless, learning technologists have a role to play in identifying where the breaks (or brakes) and inhibitors are and where the accelerators and supporters might be.

Perhaps collaboration is at least part of the answer. By participating in various communities of practice, whether in a central or peripheral role, learning technologists have the opportunity to influence developments through sharing diverse experiences. By evaluating and reflecting on these experiences, they can inform the research agenda and work alongside academics and researchers to broaden interest in the field. Perhaps this is an area which requires nurturing through regular meetings of learning technology practitioners and researchers, supported by organisations such as ALT and LTSN. Not least, focusing on learning technology within the research assessment exercise has to be seen to be a legitimate activity by academic staff and valued by their Departments.

CONCLUSIONS

Learning technology as a role within institutions has become more mainstream in recent years. The development of learning technology is increasingly embedded in institutional strategies for learning and teaching and the role of the learning technologist is seen as key to realising those strategies.

In order to achieve this however, the learning technologist needs to work across many communities and boundaries, employing different approaches to engage therein. To achieve this successfully the learning technologist needs to have legitimacy within each community. The importance of continuing professional development in developing such legitimacy and in supporting their activities has been argued. Ways in which this can be pursued, such as involvement in national networks, both formal and informal, and engagement with staff development programmes, have also been identified.

The role of learning technology practitioners and learning technology researchers are not necessarily at odds with each other. These roles can be assumed by the same individual, but increasingly this is not the case. The influence of institutional expectations of those in a support role and those in a research role are critical in determining how much time is seen as legitimate to be spending on research. What is apparent is that there is a split between those who are learning technology practitioners and those who research learning technology, each developing a community of practice. What is critical for both communities is to develop and foster dialogue and collaboration to ensure a continuous feedback loop between the two. The symposium for which this paper has been written is seen as one part of this process.

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