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Breaking the Rules: Supporting Learning and Teaching Technology Innovations

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The learning and teaching landscape in higher education fails to actively support innovators to experiment with new technologies and educational methods. It is also a poor provider of ongoing support for innovations after start up funding runs out. There are tensions between enterprise systems and 'grass roots' initiatives in a context where technology is changing rapidly and institutions are slow to respond. Innovators in learning and teaching using emergent technologies are often treated as suspects in an undefined crime. They are pushing boundaries... and bureaucratic institutional buttons! Charles Sturt University (CSU) took an unprecedented step to break these punitive rules of engagement with an institutional Learning and Teaching through Technology Innovation Support Service (LATISS). The LATISS is described within the framework of a four phase learning and teaching with technology innovation (FPLTI) management model, and offered to other institutions of higher education as a means to foster innovation.

Keywords: innovation; educational technology; learning; teaching; rules; sustain; institutional impact

Introduction

Innovators in learning and teaching using educational technologies are often treated as suspects of an undefined crime (Discussions at ACODE 57, 2011). They are pushing boundaries... and therefore also bureaucratic institutional buttons. Charles Sturt University took the unprecedented step to break the rules of engagement to actively support innovators using educational technology through the Learning and Teaching Innovation Support Service (LATISS). The institution takes a positive stance on academics using external technologies, and the first author is currently leading a group to develop guidelines for their use within the institutional environment.

An innovation management model with distinct but overlapping phases of support has emerged from practice at Charles Sturt University and from the literature. The result is a four-phase learning and teaching with technology innovation (FPLTI) management model. Phase one encourages and supports innovation and experimentation, through strategies like LATISS. Staff are encouraged to try new learning design approaches and technologies within a scaffolded framework, and without too much concern for the risk of making mistakes. Phase One is the focus of this paper in which LATISS play a key role. Phase Two involves analysing the educational potential of the innovation for niche or wider applicability at the university, while Phase Three leads to University support for dissemination and adaptation of the innovation for use in different contexts. Phase Four deals with the critical activity of sustaining the innovation through a projected lifecycle that makes optimum use of the available potential.

LATISS has been conceptualised and implemented within the broader framework of learning and teaching innovations in higher education. Experience at Charles Sturt University and research conducted in the wider context of the international higher education sector provides the theoretical basis for design of this support model.

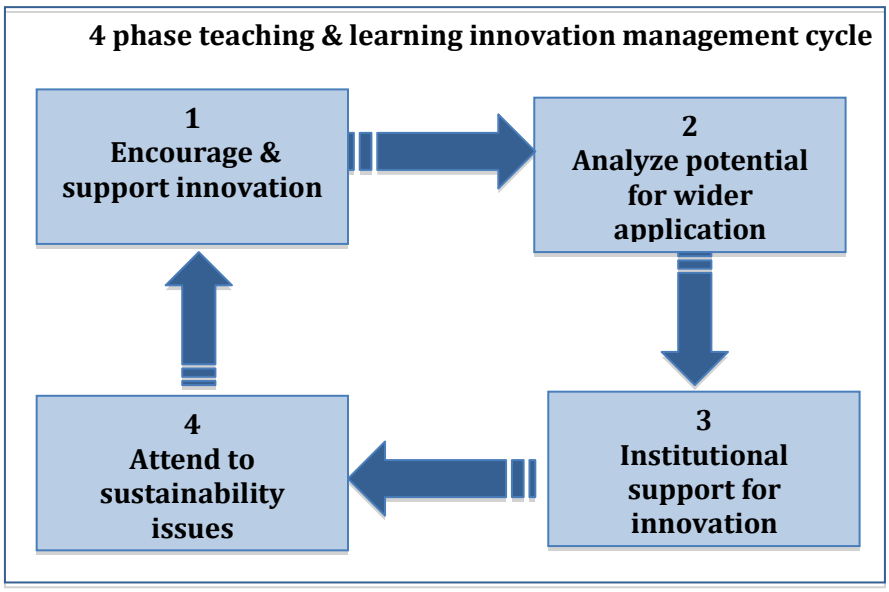

Figure 1: The FPLTI management model.

The challenges of supporting learning and teaching innovation

The challenges associated with learning and teaching innovation in higher education are not new. Earlier research explored the motives and drivers behind innovations involving new technology, and identified different sets of challenges and opportunities associated with top down versus individually driven initiatives. Hannan, English & Silver (1999) drew on interviews with 221 staff from 15 UK universities to acknowledge a range of punitive effects on lone innovators, despite the existence of institutional strategies that espoused their support. As noted above, these innovators are often treated as suspects in an unspecified crime as they challenge tradition in disciplines and institutions, and thus put personal career progression prospects at risk. This is hardly a just 'sentence' for creative attempts to leverage new technology to enhance student learning, accommodate larger and more diverse groups of learners, and meet demand from the professions for actively engaged and broadly educated graduates. Indeed, it is a testament to the commitment of the individuals concerned that innovation happens at all.

The tendency of top down initiatives to seek a 'one size fits all' solution has been found equally detrimental to the instantiation and spread of innovations. Gibbs & Gosper (2006) criticized the 'narrow view of education and pedagogically weak designs' reflected by the capabilities of the current generation of institutional elearning systems. They found the common practice of developing strategy at the centre, without broad consultation, resulted in low practitioner involvement. Hannan, English & Silver (1999) had already found teaching and learning support units struggling to implement centrally driven strategies that defined the direction, if not the actual form, that innovation should take.

A more recent study of 22 high profile elearning innovations from the Australasian higher education sector identified similar barriers in the structures and processes of the institutions that espouse their support (Gunn & Herrick 2012). On the technical side, centralized IT Services models are not set up to promote experimentation with emergent elearning tools, and pedagogical strategies are often (though not always) perceived to be constrained by the capabilities of the LMS. Common administrative tools provided by the LMS meet most faculty needs, but the 'art' of learning design demands greater flexibility and user choice. It is not, of course, reasonable to expect a central service department to be equipped to support every choice a creative teacher or adventurous learner might make.

The root of the problem can be traced to tensions arising from the interaction of new technologies with new sets of circumstances against a backdrop of institutional traditions (e.g. established ways of teaching and leading from the top) and constraints (e.g. resource limitations and enacted priorities). Various authors have defined the conditions required to support elearning innovations, (e.g. Alexander 2001; Southwell et al 2005; Stansfield et al 2009: Gunn 2011). These differ considerably from the conditions found in many contemporary universities, and are summarized as follows:

- A vision for elearning at the institution
- A culture that supports teaching and learning innovation, collaboration and risk taking
- Faculty development opportunities in learning design, project management, teamwork and evaluation
- Faculty workload policies that accommodate elearning, e.g. with time release for development
- A comprehensive technology plan, maintenance of reliable technology networks, and facilities to provide technical support to staff and students

These high level statements translate into different realties in particular institutional contexts. However, a recent study involving a group of individual elearning innovators found very few situations where all these conditions were present in their professional practice context (Gunn 2010b). Another issue here are the 'significant shortcomings in the capability of senior management teams in HEIs to identify and exploit the full strategic potential of technology' reported by Duke, Jordan & Powell (2008). Unfounded speculation and failed expectations of the impact of new technologies on higher education (e.g. Zemsky & Massy 2004) make it a hard task to gain high level commitment and to encourage other faculty to follow the road marked out by pioneers (Hannan, English & Silver 1999). So scenarios where individual innovators struggle for recognition and strategic initiatives fail to gain traction remain all too common in the university sector. A workable solution is required so the espoused institutional intention to support teaching and learning innovation can be realized. Better business intelligence to inform management decisions would be an integral part of that solution, and wider consultation is one sure way this could be achieved.

From an institutional perspective, some degree of standardization and constraint must be applied for budgets and support service provision to remain feasible. However, the trick is finding a balance that will support rather than stifle innovation, and allow the experience of exploratory work at grass roots level to inform later developments and influence strategic initiatives. This implies a staged approach to support for different types of innovations. Kelly (2006) provides an example where exploratory, developmental and validation phases take place within an educational design research cycle. Nieveen, McKenney & van den Akker (2006) note the predominant focus of published literature on validation studies. This could be explained as a result of the types of research that are acceptable for publication. Whatever the cause, it creates a communication gap that is unhelpful for individuals or institutions seeking to learn through shared experience and discussion of ideas at the exploratory or developmental stages. The most accessible place to begin to address this gap may be at institutional level, where attempts can be made to define the kind of support that innovators need and that central services can reasonably provide.

While innovation and user choice need to be encouraged, at least in the early stages, there are clear benefits from situating these opportunities within an institutional framework that shifts the perception of innovators as outlaws, and provides a reasonable level of support for exploratory work. Ideally, this would make the best expertise from across the institution accessible to innovators, foster broad collaboration, and keep central services such as Teaching and Learning Development and IT departments engaged with emergent trends (Gunn 2010b). Diffusion of leadership roles and responsibilities around elearning innovation could also be facilitated through a networked approach. As far as the literature is concerned, the challenge of defining such a framework has yet to be resolved, and the need for discussion and dissemination of ideas among innovators, teaching staff and managers remains largely neglected. The affordances of social networking technology offer the means to address these issues in a practical, inclusive and affordable way. The challenge lies in shifting institutional culture and practice to actively support what the technology affords, and in the process, turn innovators from suspects to star witnesses and key informants.

From suspect to star witness

The problems facing teaching and learning innovators and institutions are well documented, and provide a sound basis on which to build a supportive institutional framework (Stansfield et al 2009; Gunn 2010a&b). In general the learning and teaching innovation landscape in higher education can be characterized as:

- Lacking active support for innovation and experimentation
- Failing to provide ongoing support for innovators after initial funding rounds
- Lacking transparency and consultation around decisions on technology for teaching and learning
- Responding slowly to rapid advances in technology
- Espousing rather than enacting values around elearning innovation

- Creating tensions between enterprise systems and ‘grass roots’ initiatives
- Failing to acknowledge the different phases of innovation, i.e. exploratory, validation, dissemination

While broader action is needed to address many of these deficiencies, the LATISS was conceived to address the first two issues listed above.

Advancing innovation at Charles Sturt University

In the past, the Charles Sturt University innovation landscape included a number of institutional players, but support mostly occurred in formal and selective ways. A Flexible Learning Institute supported small-scale innovations, and developed ‘self help’ resources relevant to the institutional community for both small and large-scale initiatives. Further support was available through colleagues in faculties or schools, such as a fellow champion, Sub-Dean Learning and Teaching, Head of School or Learning and Teaching committee members.

LATISS was conceived by the Strategic Learning and Teaching Innovation section in the Division of Learning and Teaching Services so innovators could share what they are doing, and if required, be supported by the Information and Communication Enables Learning community of practice that has just over 650 members. This community uses Yammer, a microblogging tool, to share information and request support. The rationale for LATISS includes the beliefs that: a) to remain competitive in an open Educational Market, Charles Sturt University must create an environment supportive of learning and teaching innovation using technology; b) without this kind of innovation the University will be a perpetual follower - not an innovator; c) smaller learning and teaching innovations and experiments with new technology that happen outside the scope of projects are often valuable but not supported; and d) support should be provided for distinctive applications of educational technology in specific areas and possibly with small groups of students.

Larger scale innovation is supported at Charles Sturt University in a number of ways. Plans for new or updated educational technologies for a significant segment of Charles Sturt University can be discussed with the Executive team, Strategic Learning and Teaching Innovation or Educational Design and Media sections of the Division of Learning and Teaching Services . Proposals ultimately go to the Curriculum, Learning & Teaching Committee and the Information and Learning Systems Committee for consideration. The Flexible Learning Institute’s Teaching Fellowships provide for significant release from regular duties, and Course Team Symposium Grants offer annual funding for successful applicants to develop a course level blended and flexible learning strategy. This Institute further fosters innovation through evidence-based practice, applied research and scholarship. The university also has an Initiatives Handling Process for major strategic initiatives, and Faculty and School based schemes that deal with larger innovations.

LATISS, however, addresses informal and small-scale innovations, as outlined in this description of Phase One.

Phase One: encouraging and supporting innovation

While some of the institutional issues outlined above may be harder or take longer to address, creating an environment for mutual exploration and discussion of the affordances of new technologies can be immediate and effective. Anecdotal evidence shows that institutional social networks facilitate conversations that previously did not take place, at least in such transparent and inclusive format. Criticism of institutional systems can be aired in open channels, and so can discussion of elearning innovations and pedagogical strategies that are being tried out in different parts of the institution. This is a positive move towards a culture of collaboration, where risk taking is encouraged by the knowledge that others may be exploring similar opportunities. It is also an unprecedented way to take the pulse of the institution on matters related to any topic that may be raised for discussion by participants. While representation of staff in these networks is not uniform, it is growing rapidly in many contexts.

Innovators are in the minority among academic staff at Charles Sturt University, a situation that is typical for Australian universities, and that might be another reason why so little attention and support are provided to innovators. However, champions can have a powerful multiplication effect in their faculties and schools on integrating educational technologies within learning and teaching.

The LATISS was launched on 1 May 2012 by the Information and Communication Enables Learning community of practice, which is facilitated by the Strategic Learning and Teaching Innovation section of the Division of Learning and Teaching Services under the direction the first author. Leading up to the launch, feedback on the concept was sought from key units across the University, in particular, from academics involved in innovation with technology.

LATISS has the following key objectives:

- To communicate to innovators that the University is positive about innovations and innovators
- For champions and early adopters to innovate i.e. support personal innovation so that staff tap into their creative talents to make performance improvements in their own work
- To improve learning and teaching at Charles Sturt University by feeding back the results to appropriate groups and committees
- For innovators to share their innovations with the rest of the ICT-enabled learning community of practice
- To provide support via the Information and Communication Enables Learning community of practice to the innovators - and thus create a "lattice" of support!
- To link up innovation activities.

The public interface to LATISS is a set of Yammer pages that is only accessible to Charles Sturt University staff members. While this limits the extent of sharing to the institutional community rather than opening innovations up to the world, it is an increasingly popular set up in universities and for academics where no commitment to an open access philosophy has been made.

The LATISS concept was formulated by the Strategic Learning and Teaching Innovation section, then discussed by various interested parties, including the Division of Learning and Teaching Services Executive, the Educational Technology Reference Group that represents the four faculties, the Library, Division of Information Technology, Flexible Learning Institute, Education for Practice Institute and the Division of Learning and Teaching Services staff. It was also shared with relevant university committees, so wide consultation has helped to shape its implementation.

The opening page of LATISS links to the following pages: Charles Sturt University innovation landscape; the Division of Learning and Teaching Services support for LATISS; Library support for LATISS; Division of Information Technology support for LATISS.

On the opening page staff are asked to describe their innovation by providing as much as possible of the following seven points:

1. Aim: what learning/teaching aim are you trying to achieve through the innovation?
2. Technology: what technology/technologies will you be using?
3. Objectives: what faculty/school objective(s) are you trying to address?
4. Who: who is involved?
5. When: when do you plan to run this experiment?
6. Support: do you need support? If so, what support do you need?
7. Students: How will the students be supported?

The service was launched with an invitation to a number of academics to put up innovations that they are busy with or planning on the opening Yammer page. Eight academics responded within the first two weeks following the launch. Two further innovations were added soon after the initial eight.

The innovations posted are quite diverse, and some examples are outlined below:

> For a subject with a workplace learning component, the lecturer wants students to be able to add info into cells in a table against workplace capacities and skills that are listed in a column. The idea is for students to be able to add to this over time, as they progress through 3 subjects in a series of workplace learning subjects.

> I am taking the TESOL students from a print-based DE mode of delivery through to a blended mode of delivery and want to demonstrate what blended learning might achieve when they are considering ways to teach their own learners.
>
> We are demonstrating how to create a visual presentation that supports key thinking, and also allows students to learn about creative commons images, copyright, attribution etc. This innovation is a real-world experience, as students are already translating the new practice into their own classroom teaching.
>
> Over the last few years I have experienced a sense of disconnectedness with DE students. The forums are losing their value, as students want an answer NOW, resulting in less communication through this channel and therefore less connection within the cohort. This group of students also lacks the ability to compare assessments in the way internal students do after class and during all night library sessions. I think this communication is important in driving student achievement – most people are after all a little competitive.
>
> I am planning to refine and refocus my "Introduction to Educational Computing" subject. It works very well at the moment, and even though I usually support the idea that if something's not broken it doesn't need fixing, it is a subject that has grown and developed quite organically and needs regular updating as technologies and educational policies change. Newer technologies need to be incorporated - particularly apps and mobile devices. Two of the creative and engaging assessment tasks need to be constrained - students tend to get carried away and make HUGE assignments. Great learning, but difficult to mark and students spend too much study time on them.

The types of support that may be provided by the Information and Communication Enables Learning community of practice through LATISS include advice; brokering support within and external to units such as the Strategic Learning and Teaching Innovation section and doing this within the Division of Learning and Teaching Services; collaboration in activities; linking activities; assistance in software development; providing access to a technical innovation systems environment through the Division of Information Technology; and actual implementation.

The Strategic Learning and Teaching Innovation section has appointed a staff member who does follow-up on the innovation as one of his duties. This staff member reviews the opening page for new innovations, discusses possible support with the Strategic Learning and Teaching Innovation section colleagues, and posts a response to each innovation. The staff member will also follow up with the innovator at the end of the experiment to encourage them to post their findings on the opening page with the original information on their innovation.

It is still very close to the launch and there is currently a long teaching break, so we look forward to seeing more innovations being listed, but at least some innovators have shared their work and it is now known that Charles Sturt University is proactive in supporting its learning and teaching with technology innovators.

Phase Two: analysing the innovation for niche/wider applicability

Phase two of the process is where innovations that have passed an initial proof of concept phase can be assessed for feasibility, and potential for application beyond the original development context. This presents challenges around the sharing of information at an individual level, and knowledge management by the institution, so that even if a development will proceed no further, the experience gained through exploratory phase is not lost. The ability to pursue this form of evidence based practice is important to produce efficiencies, and to guide teaching and learning development at both individual and strategic levels. This has been problematic in the past, however, as innovators tended to stay off the radar so the ‘suspect’ nature of their activities did not attract attention. A more transparent process and enacted support for innovators will hopefully help to address the challenge.

From an institutional perspective, it is necessary to determine if the innovation addresses wider needs: either for a particular niche or for use across the University. Either case would be fine, but there is currently no specific process in place in most institutions to either gauge or encourage wider interest, or to determine what level of investment might be justified given the prospects. Central service units often showcase and highlight support available for innovations. However, it is not uncommon to find an original developer trying to take responsibility for all user

support and professional development in order to disseminate their work. Different sets of skills are involved in development, dissemination and support; so different people should be allocated to these processes, including professional development, customization of learning designs, end user support and technical maintenance.

A challenging question in this context is, what kinds of evidence need to be gathered and presented to convince other faculty and institutional leaders that support or further investment in justified? Few innovators in learning and teaching with technology would aim to present a business case to the institution to secure the future of their creations. It is more likely that they would evaluate its impact on student learning in different educational contexts and publish the results in conference proceedings and scholarly journals. These two forms of reporting are equally valid, but serve very different purposes, so the question needs to be addressed from the perspective of the different interests and priorities of those involved.

A further challenge relates to the emergent nature of learning innovations, and the fact that it may be impossible to predict or fully appreciate potential in the early dissemination stage. The only reliable prediction about the use of new technology in education is that forecasts are usually wrong. It is often not possible to predict how people will use a new system or tool until they actually get involved and try it. The eventual uses often come as a surprise to the developers. It is therefore asking the institution to take a risk in backing emergent innovations, the prospects of which cannot easily be framed in 'business language'. As Lorraine Stefani (ACODE 58 Presentation) said 'we must be more business like, but not more like business' as the impact of promising innovations cannot be costed, yet investment decisions demand an evidence-base of a 'business like' nature. Broad consultation is also required to determine processes and structures for Phase 2 of the Innovation support initiative. However, this remains a work in progress for most institutions.

Phase Three: University support for innovation

Once an innovation has been reviewed and scope for wider application identified, the following issues need to be addressed:

- Identify affordances and strategies to promote integration into pedagogical practice
- Licensing arrangements (if appropriate)
- Professional development requirements and strategies
- Change management plans
- Implications for guidelines/policies;
- Staff and student support requirements
- Ongoing financial commitment

These are all significant issues in the university context, which given the pace of change, will take some time to work through and involve a degree of uncertainty around eventual outcomes. Again, broad consultation is required, and possibly also the establishment of new working relationships. For example, some of the innovations examined by Gunn & Herrick (2012) involved collaboration across teaching departments, libraries, central teaching and learning and IT support centres. Establishment of these cross-functional relationships for a particular project was usually not an easy task, so it may be reasonable to expect that doing so on a longer-term basis would be equally challenging, at least in the establishment phase. Shifting the culture and practice of learning and teaching within an institution is no simple task either. A suitable approach is identified in the 'ecologies of learning' concept defined in a report from the UK Association of Learning Technology (ALT 2010). The multi-faceted support strategies provided through flexible and responsive systems that are required to articulate such ecologies present multiple challenges to established institutional culture and practice.

Phase Four: Sustain the innovation

As well as supporting early stage exploration and broad collaboration, institutional social networks provide a way to gauge popular interest in particular innovations, which in turn can be used to guide decisions about what to support and where to invest resources. Gunn & Herrick (2012) recommended ways to support innovations after an educational concept has been proved either with or without the start up funding that most institutions already provide. Proposed actions include the use of initial scoping information gathered through systematic process as an input to design and decision-making; and use of more formal project management techniques by multi-skilled teams

for the development and dissemination phases. Two critical success factors, however, are choosing the right innovation to back, and getting the right team together to promote it. The common situations where innovators and initial developers are also expected to take responsibility for dissemination and provide all forms of support have proved to be unrealistic. This is not surprising given the wide range of skills and the time commitment involved in these different activities. Evidence from their investigation of 22 case studies (Gunn & Herrick 2012) showed that the number of years in development and levels of investment were not reliable predictors of dissemination or sustainability prospects. Since management backing does not appear to be the most reliable predictor of popular interest, it may be posited that a more democratic method for choosing what to support could lead to better results.

It is critical to employ appropriate change management strategies to sustain innovations in learning and teaching with technology. Managing change for enterprise-wide impact in higher education is particularly problematic since people are central to the process, and it is therefore necessary, as Fullan (1991, p350) suggests, "…that we explicitly think and worry about the change process" in educational reform. The LASO (Leadership, Academic & Student Ownership and Readiness) Model for Technological Transformation in Tertiary Education attempts to address the wider context in which the infusion of educational technologies takes place, and acknowledges that the process of enterprise-wide technological transformation is complex with many dislocations, dilemmas and uncertainties (Uys, 2007). The LASO model proposes that top-down, bottom up and middle out strategies operate in unison to achieve sustainable change (Uys, 2010; 2009a,b &c).

Summary

A service like LATISS is designed to fill a very specific void in the typical innovation landscape at universities. It is very early in the use of LATISS, but it is promising that 10 innovations were listed in the first few weeks after the launch of this service. Although it limits the spread of innovation to staff in a single institution through a social networking extension to the intranet, this is a sufficiently major change for many, and will inevitably lead to wider sharing as individuals engage in various external networks. It also provides an important preliminary step into the social networking world for novices.

A local version of the LATISS and the four phase learning and teaching with technology innovation management model could be of value to higher and tertiary education providers who wish to ensure successful innovation. A service like LATISS could play a significant support role in Phase One, and the strategies for action recommended by Gunn & Herrick (2012) could usefully address later stages of the process. An ecological approach is essential to the innovation process, which has neither a fixed start nor end point, and where the outcomes of dissemination strategies often cannot be predicted before they materialize. The unpredictable nature of innovation presents many challenges to planning and budget cycles and the forecast based futures of higher educational institutions. However, failure to respond to these challenges with flexible and supportive strategies for innovation creates the unacceptable risk of failing to move with the times in an environment where no university can afford to be left behind.

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