

What next? Progressing learning innovations in a regional university

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Introduction

Synonymous with technology, innovation is a vital part of the evolution and longevity of universities. Currently, one of the most common innovations is the implementation of Web 2.0 technologies to support learning and teaching. Web 2.0 technologies are almost as ubiquitous as mobile phones in the everyday lives of students and many university instructors (Yun-Jo & Williams 2010). It is thought that these tools have the capacity to reshape learning and teaching through increased access to resources, collaboration and real-time learning support (Resta & Laferrière 2007). Many educational institutions have been integrating these tools into their courses in an effort to provide their students with single-point access to a range of course content, multimedia applications, and tools for asynchronous and real-time communication between students and tutors (Gallagher 2005, p. 1831).

The University of the South Pacific (USP), a regional university owned and governed by 12 countries is no different in its ambition to be innovative, particularly with its flexible learning programmes. As part of a socio-economic and geographically challenged region, it endeavours to address the access and equity gap by taking its programmes and courses to a student base spread across the sub regions of Oceania classified as Micronesia, to the west of the Pacific Ocean, Polynesia, spread over the central and southern Pacific Ocean, Melanesia, extending from the western end of the Pacific Ocean to the Arafura Sea, and eastward to Fiji. The region comprises most of the islands immediately north and northeast of Australia (Howe, 2008).

This paper examines three learning innovations at USP to address the following questions: How does innovation for flexible learning occur in a regional university? Is there a method to this process? How is progression to the next new learning innovation considered? Using the RIPPLES model as a framework, a review of literature on learning technologies at USP is undertaken and presented as retrospective cases to address the key questions raised in this discussion. A learning management system, an ePortfolios system and a plagiarism checker lie at the centre of the discussions. A definition of innovation is presented in the next section as a prelude to the cases.

Innovation

As human civilisations progressed through history, striving to enhance their lives and society, innovation has characterised this process of discovery and invention. Arguably as a concept, innovation had its beginnings in the discipline of Economics. Joseph Schumpeter, an economist provided one of the earliest known definitions of innovation, as “the introduction of new goods (...), new methods of production (...), the opening of new markets (...), the conquest of new sources of supply (...) and the carrying out of a new organization of any industry” (Schumpeter, 1912) Most of the widely-used definitions of innovation focus on novelty and newness (Johannessen, Olsen & Lumpkin 2001) and imply some form of benefit to the organisation. Newness is also associated with change (Baregheh, Rowley & Sambrook 2009). Damanpour (1996) explains, “innovation is conceived as a means of changing an organisation, either as a response to changes in the external environment or as a pre-emptive action to influence the environment. Innovation here is broadly defined to encompass a range of types, including new product or service, new process technology, new organization structure or administrative systems, or new plans or programs pertaining to organization members” (p. 694). This paper uses the definition given by Rogers (1962) as

“an idea, practice, or object that is perceived as new by an individual or other unit of adoption. It matters little, so far as human behaviour is concerned, whether or not an idea is objectively new as measured by the lapse of time since its first use or discovery. The perceived newness of the idea for the individual determines his or her reaction to it. If the idea seems new to the individual, it is an innovation” (p. 12).

This last definition appears relatively more robust as it also allows space for examining how the use of technologies spread, that is beyond the basic characteristics of an innovation. Rogers' definition of innovation was followed by his primary theory of the diffusion of innovations. Diffusion, according to Rogers (1962) is

“the process in which an innovation is communicated through certain channels over time among members of the social system” (Rogers 2003, p. 5).

The RIPPLES model

Advanced by Surry, Ensminger & Haab, (2005) and influenced by Rogers (1962), the RIPPLES model emerged from inquiry into the integration of instructional technologies into universities and colleges, highlighting the need to consider Resources, Infrastructure, People, Policies, Learning, Evaluation and Support in the adoption process (Tickle, Muldoon & Tennant, 2009). The four main applications of the model according to Surry are:

1. Implementation Planning - Determining an organization's overall implementation readiness and identifying specific barriers or enablers to implementation.
2. Implementation Support - Developing specific interventions that will facilitate the implementation of an innovation thereby reducing stress, and saving time and money.
3. Implementation Evaluation - Understanding the reasons for a successful or unsuccessful implementation in order to better prepare for future implementations.
4. Research - Developing better theories about why implementations succeed or fail and creating theory-based models for supporting implementation in a variety of organizations.

(<https://sites.google.com/site/dansurry/ripples>)

According to Benson and Palaskas (2006) the “RIPPLES model appears to be a useful tool for analysing institutional innovations... it covers major factors that need to be considered in the higher education environment”. Estminger and Surry (2008) suggest that if the success of an innovation is directly tied to its successful implementation, organizations must not only be aware of variables that facilitate implementation, but

need a means for determining which variables are most important to their organisation, given a specific innovation (2008, p. 612).

In the selected definition of the RIPPLES model explored so far, there is also an underlying assumption that implementation follows a preconceived plan. This same plan progresses or matures into a reflective process through “evaluation” and then provides room for growth in the “research” phase. This apparent linear progression in turn assumes a consensus across at least the definitive or a majority of the organization’s decision-making parts. Whether or not this is true of the USP experience remains to be determined by a closer analysis. The following view taken by Benson and Palaskas (2006) reflects more closely the process of selection at USP where “the process was volatile and subject to evolution in response to the priorities of a number of different stakeholders, resulting in a highly pragmatic and dynamic adoption environment (p. 548).”

In the next section, the RIPPLES model is considered against the backdrop of three cases at USP as reported by various authors currently and previously employed by USP. As these cases are presented in retrospect, discussions focus on what aspects of the RIPPLES model were prominent in their implementation.

Case 1: Learning management system

Whelan & Bhartu’s (2007) paper, “*Factors in the deployment of a learning management system at the University of the South Pacific*” provides the context for the first case. Learning management systems at USP have been widely debated (and at times fuelled contentious discussions) in terms of the relevant technologies to support flexible learning in the last ten years. Learning management systems are more commonly known as a suite of software tools that enable the management and facilitation of a range of learning and teaching activities and services (Naidu 2006). Whelan & Bhartu (2007) observe that different institutions have approached LMS deployment and integration in a variety of ways. Some researchers take a pedagogical-theoretical perspective. For example, Papastergiou (2006) discusses and evaluates LMS usage from a social constructivist framework, emphasising the increase in workload on faculty and the limitations in terms of assessment and collaboration. On a different trajectory, Ulmer and Leech (2005) examined ways to address university policy, federal guidelines, end user requirements, and technical potential within a single LMS

solution. Universities continue to ponder the issues of customizability, flexibility and control showing that the choice of LMS may not necessarily be about cost and ease of use but can be driven by the priority to manage course content and knowledge (Chesher & Howard 2011). The University of the South Pacific (USP), according to Whelan & Bhartu (2007) grappled with deploying a single enterprise LMS in the midst of maintaining three different web-based LMSs at the same time. This was perceived as illogical and as having a negative impact on the overall effectiveness of learning and teaching, particularly to students in the distance and flexible learning mode (Whelan & Bhartu 2007, p. 1054). After nearly ten years and an LMS evaluation by the Distance & Flexible Learning Support Centre, now the Centre for Flexible Learning (CFL), USP selected Moodle (Hunter & Hazelman 2005).

Locating the RIPPLES model within the deployment process of Moodle at USP produces interesting and informative observations. The selection process was driven by a saturation of LMSs that ultimately did not serve fundamental institution priorities. Recognising that the LMSs at the time were inappropriate, the “implementation planning” phase introduced a totally new system to the learning and teaching environment. Furthermore, USP’s choice of Moodle as the sole LMS was influenced considerably by its availability as a mature open source solution at the time and the need to be cost effective. USP was also relatively ill-equipped to handle open source programming and did not have the necessary access to Moodle partner services such by Netspot (Australia) and Catalyst (New Zealand) for example. Consequently, building Moodle ‘from the ground up’ incurred considerable costs. One such cost was the establishment of the the Learning Systems Team (LST) which has evolved from a ‘one-man team’ to a team of five that now oversees USP’s key learning technologies. However, with the selection of an institution-wide LMS, the precarious balance between priorities against resources was glaringly evident in a region characterized by developing country economies.

Quality learning and teaching through Moodle, and expedient and effective decision-making with regard to the continued development and sustainability - of any LMS or learning innovation- constantly competed with very real challenges in supplying adequate resources. Ultimately, the collaborative partnerships that existed between USP and Australia proved fortuitous in meeting the initial resource requirements for a successful implementation. In this regard internal organisational

planning supported by external collaborative partners enabled the implementation. Five years after implementation, all undergraduate courses have, at least, a Moodle presence, ranging from a blended approach to fully online. The number of fully online undergraduate programmes are expected to increase by 30% in the next five years (USP Strategic Plan 2013-18, p. 30). While the LMS selection process and intervening support were overt and definitive, evaluation and research processes are not so easily identifiable. With the selected LMS in operation, online course and programme design and development have been driven by boldly articulated institutional strategic plans, that is, the USP Strategic Plans 2010-2012 & 2013-2018. Key performance indicators have provided the main source of evaluation with regard to measuring the primary impact on learning and teaching. The introduction, adoption and adaptation of learning technologies and new pedagogies enabled by the implementation of an LMS, have seen the evolution of multidimensional developments. The introduction of the Mahara ePortfolio system at USP in 2009, two years after Moodle was implemented as the institutional LMS, is a case in point.

Case 2: ePortfolio system

Prasad, Tuisawau, Yusuf & Bhartu's (2010) paper, "*The final countdown 3, 2, 1 ... zero: Launching towards a university wide implementation of an ePortfolio system*" provides the context for this second case. Similar to the selection process of the LMS at USP, the selection of Mahara by CFL was largely due to its availability as an open source system and its integration capacity with Moodle. Developing a comprehensive matrix (Prasad, et al. pp. 4-6) for testing Mystuff, Elgg and Mahara also reflected the growing maturity of the planning and support processes experienced in the LMS selection process. The adoption of the ePortfolio as the platform for collecting artifacts for assessment in a compulsory first year (degree) course - UU100: Communications and Information Literacy - in 2010, provided the first ever opportunity for "some serious exploration of best ePortfolio solution/practices" (Prasad, et al. p. 1). Currently in operation for two and half years, the ePortfolio has not had the anticipated widespread application that attended its optimistic introduction. However, with UU100 enrolments in excess of 1000 students per fourteen-week semester, the stability of the integration with Moodle has been working successfully.

In applying the RIPPLES model to this case, planning, support and an implicit evaluation of the implementation in terms of its successful integration have contributed directly to addressing the graduate attributes of the institution (USP Strategic Plan 2013-18, p. 19). In the rapidly developing online milieu coupled with increasing accreditation submissions, it is only a matter of time before the ePortfolio becomes a standard design feature in USP programmes. Currently in development, two full programmes (with a total of 48 courses) have included the ePortfolio.

The research element in the implementation of these first two cases, the LMS and the ePortfolio, has lagged considerably behind. In the hugely distributed learning and teaching environment of 33,000,000 km² of Pacific Ocean, the challenge to develop and deliver quality education can sometimes overwhelm other academic endeavours. While research activity is readily apparent, the USP strategic plans since 2010 in particular, have overtly championed research as a fundamental priority area. With regard to the innovations examined so far in the USP online learning and teaching environment, research projects currently in progress will identify not only the strengths and weaknesses of implementation but more importantly inform projected innovations in this specific context. The fundamental benefits in terms of initial funding, time spent and implementing the most relevant and sustainable systems can never be understated in the multifarious-challenged USP environment. In the next and final case, a relatively different type of planning and implementation took place.

Case 3: Plagiarism checker

USP's solution for an institution-wide plagiarism checker was TurnItIn. Formally approved by the USP Senate in 2010, this is commercial software requiring annual license renewals. Moodle and Mahara as previously stated are open source and essentially free of any licensing obligations by USP. CFL was tasked with implementing the software through Moodle while the Information Technology Services (ITS) department funded it. It must be noted however that while TurnItIn has application for a large number of USP courses, it is limiting in terms of its application in some of the Science disciplines such as Computing, Chemistry and Physics. TurnItIn is a "text matcher" (Pratt 2010) and its use in disciplines which incorporate specialised chemical symbols and programming language may be impractical.

Other than a former Tourism lecturer's public presentation of TurnItIn at the VC's Learning & Teaching Forum in 2010, there have not been any published works recorded on the introduction and implementation of TurnItIn at USP. The first known instance of the use of TurnItIn at USP however was arguably in the School of Tourism and Hotel Management (STHM) when a new lecturer (who had used it at a previous tertiary institution) proposed it to the Acting Head of School who then proposed it to the Board of Studies (BOS), now the Faculty Academic Standards and Quality Committee (FASQC). The earliest implementation in practice was semester two of 2006 according to purchase orders for the software. Swift funding for the software was initially provided under a European Union (EU) project active at the time. According to the Admin Assistant at the time, the STHM moved to implement it in all of their courses and accompanying course materials. To date it is used in all relevant USP courses in Moodle, as a compulsory plagiarism detector for assessment submissions.

Considering the RIPPLES model with regard to the deployment of TurnItIn, a trial of the system by one section of the institution informed a binding decision at the highest level (the Senate). In contrast to the other two cases, a proprietary software was selected. Of the three cases, the relative ease with which this innovation was introduced was due largely to the increased collective awareness of learning technologies. At both the operational and administrative levels of the institution, consensus with regard to choice, implementation and in this specific case, policy, was a seamless process. Planning, support and evaluation converged from different sections of USP – the Senate, the STHM and CFL – to implement a USP-wide innovation to address the real threat of plagiarism.

The most significant feature of this implementation lay in the USP-wide policy – “3.4.3 Academic Honesty: Mandatory use of Turnitin” - passed by the Senate in August 2011, stating the mandatory requirement that “all written assessment for marking” will be submitted “to TurnItIn.” Exceptions may be given for courses where students in remote locations have very limited access to the internet. Initially designed for student use, TurnItIn is now also used by staff members particularly for checks on conference papers and presentations. Subsequently, there have been more recommendations about other plagiarism checking systems from various teaching and non-teaching sections of the university based on more formative-type checking software. Noticeably absent in

the TurnItin case is the prior uncertainty and resistance that characterised the introduction of Moodle and Mahara.

Conclusion

There does not appear to be a formal process for innovation at the University nor a method, especially for distance and flexible learning. While there may be an expectation that CFL leads the learning innovations agenda, it does not preclude other sections from being innovators themselves and rightfully so. Innovation tends to occur in various 'pockets' around the university. Such was the case for Turnitin before any kind of critical mass was achieved. To this end, innovation was more sporadic than systematic. The 'next best thing' is often the result of individuals being informed through their own networks, external experiences and engagement in conferences, workshops and memberships with professional institutions and then bringing it to the consciousness of the university.

In its ambition to be innovative however, by introducing selected learning technologies and new pedagogies, USP's growing maturity in the implementation and use of Information and Communication Technology, also provides this opportunity for reflective practice. The planning and support phase for the introduction of Moodle as the university LMS, presented arguably the most transformative change in distance education at USP. It should also be noted that "most successful strategies are not totally planned in advance" (Bates, 2003). The same is also true for the LMS implementation at USP. Much of the success of USP will depend on institutional systems that overcome the tensions and ambiguities of the past. Faculties need to work more collaboratively with CFL and vice versa. CFL must provide intellectual and technological leadership and assistance (Chandra, Hazelman & Koroivulaono 2011, p. 229-30).

The uncertain terrain that often attends a sweeping institutional transformation was evident in both the faculties and professional sections. Given the widely variant learning and teaching environments and the capacity to support online learning particularly in the regional campuses, implementation at course level was slow in the first four years (2007-2011). Focus on achieving USP's strategic objectives then added to the impetus for a 100% Moodle presence in all undergraduate courses at the beginning of 2012. The evaluation of choices was carried out at the start of the process

to determine which LMS was suitable, although subsequent evaluations have yet to be conducted. However, compatible plug-ins like Mahara and TurnItIn provided opportunities for the Learning Systems team working with other staff members to determine suitability after evaluating other systems against functionalities in Moodle.

Choosing a compulsory university course at first-year degree level afforded the opportunity to test Mahara as the selected ePortfolio system on a large scale with regard to delivery, functionality and sustainability. As a benchmark, the further application of ePortfolio in learning design can be substantiated by reference to the UU100 experience. The recent inclusion of ePortfolio for the first time, in two programmes currently in development, points to the ‘tried and tested’ approach engendering confidence of use across the university. Informal evaluations through meetings and other discussion forums within USP have been the main sources of evaluative processes post-implementation.

The implementation of TurnItIn points decisively to a relatively seamless acceptance. In the absence of research and evidence to the contrary, but supported by a specific precedent (in the STHM) and internal discussion forums leading up to implementation, institutional change management had matured exponentially in four years.

The research component in each of the three cases presents the most fertile area for development with regard to the application of the RIPPLES model in the USP learning and teaching environment. With the increasing need for integrating other learning technologies and adopting new pedagogies, more timely and robust research projects will complete the evaluation and improvement cycles required for quality-driven implementation processes. While USP continues to interrogate and integrate new ICT developments in learning and teaching, the need for both the ‘macro’ and ‘micro’ picture analyses becomes much more immediate to enable appropriately informed planning, support and evaluative processes. Given the specific context in which USP operates and the strident objectives articulated in its Strategic Plan 2013-2018, reflective opportunities (like this one) provide critical forums for holistic and comparative analyses for the optimization of resources in future implementations.

Finally, in answer to the question, “What next?” the issues and events explored in this paper provide stable platforms for progressing innovations. Using evaluative processes before selection that also factor in existing innovations and initiatives provide

the most informed start. These evaluative processes must be constructed in response to student needs and USP's strategic objectives. Most importantly, relevance and sustainability should guide any future moves to progress learning technologies at USP, being informed particularly by the experiences of the university staff members and other regional and international universities.

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