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Blended learning innovations: Leadership and change in one Australian institution

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ABSTRACT

This paper reports on the current experience of one higher education institution in Australia embarking on the path towards mainstreaming online learning opportunities by providing three complementary academic development initiatives that can inform strategies undertaken by other institutions internationally. First, an academic development program was redesigned and delivered in blended mode to provide teaching staff with the experience of learning in a blended environment to raise their awareness of effective strategies. Second, an accredited postgraduate course for teaching staff on the subject of educational design was redesigned to focus on strategies for online and blended course design and delivered fully online to raise awareness of online learning benefits. Third, a Massive Open Online Course (MOOC), entitled Learning to Teach Online (LTTO), was developed to offer professional development opportunities to teaching staff at the higher education institution, as well as to a wider international audience of educators. The threefold professional development strategies reported in this paper provide teaching staff with an opportunity to interact, mentor, and share knowledge with one another, alongside experiencing online and blended learning to effectively meet the challenge of improving the digital literacy of teaching staff and enhancing effective online and blended learning opportunities for students.

Keywords*: academic development; professional development; course design; blended learning; online learning; MOOC*

INTRODUCTION

Teaching staff technology adoption continues at a slow pace and often does not involve effective, transformative practices (Torrisi-Steele & Drew, 2013). As noted in the New Media Consortium's (NMC) recent regional and global reports (Johnson, Becker, Cummins, & Estrada, 2014; Johnson, Becker, Estrada, & Freeman, 2014), there is strong international pressure to mainstream online learning methodologies alongside the growing demand for learner-centred online learning opportunities and the rapid growth of Massive Open Online Courses (MOOCs) across the higher education sector. However the challenge lies in addressing the low digital literacy amongst teaching staff. A recent study (Mirriahi & Alonzo, 2015) has shown that, while educational technology integration in course design in some higher education institutions remains conservative, students continue to prefer more technology-enhanced learning experiences. Further, the rise in demand for online learning opportunities has led to a range of issues in relation to accreditation that need to be addressed, such as: the examination of appropriate curriculum development and pedagogical approaches for online delivery; capacity for monitoring rates of progression and completion, and the support and development of staff in online course delivery (TEQSA, 2013).

The move towards online learning opportunities is evident amongst both developed and developing countries (for example, Rabayah, 2008; Kabilan & Rajab, 2010; Ming, Hall, Azman, & Joyes, 2010). Hence the future of learning and teaching across the world will require digital literacy of teaching staff, which at the moment needs to be improved (Johnson, et al., 2014).

Educational institutions around the world are adopting blended learning (a combination of face-to-face in-class and online course delivery) (Graham, Woodfield, & Harrison, 2013). This paper discusses the strategic approach taken by the University of New South Wales, Australia (UNSW Australia) to develop the capacity of its teaching staff to design and deliver their own online and blended courses in order to increase the adoption of online and blended learning practice across the institution. While the strategies deployed are not unique to UNSW Australia, as other universities in Australia have similar objectives and approaches, this paper contributes to existing literature by reporting on strategies currently underway at UNSW Australia specifically, which other institutions, particularly those in developing countries, could adopt and apply to their own contexts.

LITERATURE REVIEW

Teaching staff technology adoption and student technology use

The ever-changing landscape of higher education brought about by the advent of technology and its affordances to offer more personalised learning, calls for an action to mainstream online learning methodologies (Johnson, Becker, Cummins, & Estrada, 2014; Johnson, Becker, Estrada, & Freeman, 2014). The issue of low digital literacy amongst teaching staff must be addressed if effective online learning is to become a critical component of a conventional higher education. The limited use of educational technology in higher education can be attributed to teaching staff low digital literacy (Johnson et al., 2014) contributing to minimal effective integration of technology in course design. The reasons that teaching staff may be hesitant to adopt educational technology range from unfamiliarity with the tools (Handal, MacNish, & Petocz, 2013) to concerns about the availability of technological support, and their perception about the relevance of technology to enhance student learning (Kennedy, Jones, Chambers, & Peacock, 2013). These attitudes of teaching staff towards technology acceptance were found by Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, and Sendurur (2012) to have the greatest influence on the success of technology adoption and use in the classroom. Hence, to enhance technology adoption amongst teaching staff, it is critical to assist them in valuing the affordances it provides for delivering flexible and personalised learning, coupled with enhanced student engagement (Chen, Lambert, & Guidry, 2010).

Changing teaching staff practices through online and blended learning

As outlined above, facilitating a mind shift amongst teaching staff to take advantage of the online environment is one of the critical problems in implementing online or blended learning initiatives. It has been argued by Korthagen and Lagerwerf (2001) that personal experience, supported by concrete examples, are needed for knowledge to have a strong influence on teaching behaviour, and ultimately on one's routine practices,. In the case of blended learning, teaching staff beliefs and attitudes formed from their experience with educational technology can contribute greatly to its successful adoption and integration in their own course design. Hence, providing teaching staff with authentic blended and online learning experiences, using the same technologies that they could use in their actual teaching practices, can be an effective professional development strategy (Ertmer et al., 2012). Professional development programs for teaching staff offered in online or blended learning modes have the potential to build their confidence and awareness of effective flexible learning and teaching strategies (Atkinson, Fluker, Ngo, Dracup, & McCormick, 2009). In particular, they can provide a flexible, reflective and personally relevant learning experience, and the opportunity to establish online communities that can encourage ongoing access to resources, support, and sharing of knowledge (Glitz, 2013). To encourage the integration of online technologies into course design, and to minimise barriers to the actual use of

the technologies, higher education institutions need to raise awareness of the benefits of effective online learning strategies by providing a range of opportunities for professional development and establishing institutional policies and strategic initiatives (Garrison & Vaughan, 2011).

Theoretical basis of an effective blended or online professional development program

The design of effective professional development programs has been widely argued to embrace a supportive environment, job-embedded tasks, instructional-focused content and methodology, collaborative in nature, and on-going engagement of teaching staff (Hunzicker, 2010). Apart from these characteristics, one important aspect of a useful professional development program is the availability of a range of program designs where teaching staff can select which one best suits their needs and interests. Teaching staff who have greater autonomy in selecting a specific professional development program tend to gain greater benefits and have higher satisfaction of their experiences (Berry, Daughtrey, & Wieder, 2010). Also, critical to the success and impact of professional development programs is the degree of choice available to teaching staff for selecting their learning pace and navigation of content (Porter, Garet, Desimone, & Birman, 2003). However, regardless of blended or online learning initiatives, the design of such programs should be underpinned by theories of learning, which have been widely documented to have significant impact in improving learning gains (Fouser, 2010; Michael, 2006; Poelmans & Wessa, 2013). Specifically, the design of professional development programs should be rooted in constructivism (Dewey, 1916; Bruner, 1996) and social-constructivism (Vygotsky, 1978; Maddux, Johnson & Willis, 1997) alongside with the principles of adult learning (Brookfield, 1995; Knowles, Holton and Swanson, 1998) as demonstrated in the study of Huang (2002).

The constructivist theory of learning allows teaching staff to construct their knowledge and skills in blended or online learning and teaching through their actual experience in a professional development program that allows them opportunity to experience blended and online learning first hand. The use of technology to facilitate the construction of knowledge (Muir-Herzig, 2004) and their actual engagement in blended and online learning enables them to see connections between their learning experiences and their actual teaching responsibilities as facilitators of blended and online courses (Flores, 2005). In addition, following the tenets of social-constructivism, teaching staff are encouraged to share their experiences with one another using online technologies. This interaction allows them to understand each other's unique context and experience in blended or online learning, which consequently expands their knowledge. Social interaction in the online environment helps people to share knowledge, develop and evaluate meanings, and hence enrich their understanding (Garrison & Vaughan, 2011).

The effectiveness of online or blended professional development programs lies primarily on the use of technology to form a community of learners where teaching staff actually learn (Schlager, Fusco, & Schank, 2002), and it should facilitate the social-construction of knowledge (Lloyd, 2000) through online discussion and peer support (Ellis & Phelps, 2000). In addition, technology use should facilitate reflective practice amongst individual participants, which has been found by Prestridge (2014) to transform their pedagogical beliefs and practices. Further, as Hanson and Carlson (2005) argue, teaching staff must be digitally literate to maximise their use of technology and must have a high level of understanding of how technology can support teaching and learning in an online environment. Further, their digital literacy needs to be supported to be at the required level of the program design to ensure that they can navigate and engage with the online environment (Childs, Blenkinsopp, Hall, & Walton, 2005).

CASE STUDIES IN PROFESSIONAL DEVELOPMENT IN ONLINE AND BLENDED LEARNING AT UNSW

In response to these imperatives, three complementary professional development opportunities are offered at UNSW Australia to provide opportunities for teaching staff to develop their confidence and capability in designing online and blended learning courses. Two of these academic development opportunities were existing programs that were significantly redesigned to be offered in a blended or fully online mode while the third is a new strategy as a complement to the other two. These three strategies are discussed below as three separate case studies that demonstrate the effective complementation of blended or online professional development programs where teaching staff can choose which one suits their learning needs well.

Case Study 1: Foundations in University Learning and Teaching

The Foundations in University Learning and Teaching (FULT) course is a professional development program aimed at developing the foundational knowledge, skills and attitudes of UNSW teaching staff necessary to inform effective and scholarly teaching approaches. Similar introductory teaching development programs are offered by most Australian universities to their teaching staff (Hicks, Smigiel, Wilson, & Luzeckyj, 2010). FULT has been offered at UNSW Australia for over 25 years in different forms and traditionally, up until last year, delivered primarily face-to-face. However, in 2013 FULT was redesigned to better align with the university's strategic intent to develop teaching staff capabilities to teach in blended learning mode, incorporating a 'flipped classroom approach' as outlined in UNSW Australia's Learning and Teaching Strategy 2014-2018.

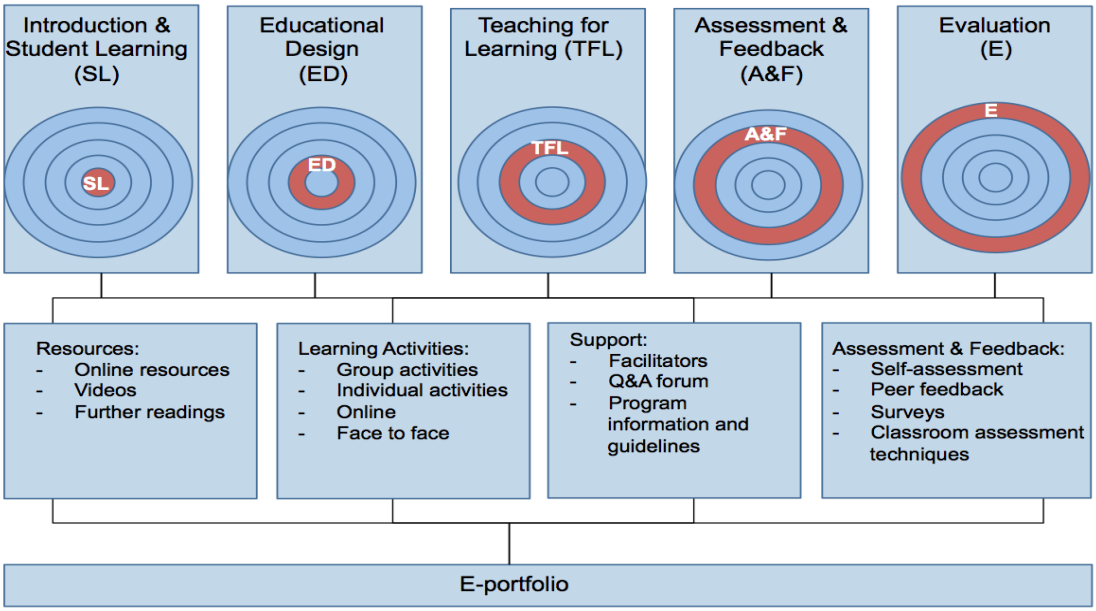

Figure 1: *The Foundations in University Learning and Teaching (FULT) course. FULT comprises five modules that combine individual and group learning activities online with interactive face-to-face sessions.*

This approach is based on the work of Baker (2000) and Lage, Platt, and Treglia (2000) where the passive component of the course, such as reading textbooks, listening to podcasts and watching videos are individually done by students whilst the more active components of the course are used to engage students through problem solving, case studies and discussions. This flipped classroom can help students to increase their motivation and manage cognitive load (Abeysekera & Dawson, 2014), maintain their class attendance (in blended learning) and sustain their out-of-class effort (He, Gajski, Farkas, & Warschauer, 2015), and increase their participation and interactions with teaching staff (Roach, 2014).

FULT's course design is underpinned by the beliefs about when learning is most effective (see Table 1).

Table 1: *Implications for program design when learning is most effective*

Principle	**Implications for program design**
1) Active engagement	Teaching staff have an opportunity to engage in an active process of making sense of new ideas or experiences. This involves action (trying out of new ideas) and reflection (based on feedback).
2) Draw on own practice and prior knowledge in authentic environments	Teaching staff have an opportunity to reflect on their own practice, work with authentic scenarios and own examples emerging from their practice, and the practice of their colleagues.
3) Build connections	Teaching staff have opportunities to build connections with content, with peers, and with teachers (e.g., Anderson, 2008; Garrison et al., 2000) in disciplinary and cross-disciplinary contexts.
4) Understand expectations	The various options and paths through the program are made explicit to teaching staff. Program facilitators are available to provide guidance.
5) Are challenged and supported	The program models a climate of enquiry where teaching staff are challenged, while being supported to take sensible risks in their teaching. The misconceptions of teaching staff are identified, and they have an opportunity to review their conceptions / practice based on the feedback provided.
6) Respect and cater learner diversity	The program models inclusive learning environment where teaching staff feel valued and respected.

The following design principles guided the redesign of FULT from fully face-to-face delivery to the blended mode undertaken in 2013-2014:

1. Flexibility: The program moved from a five-day workshop to a modularised approach with five distinct modules spanning approximately two to three weeks each. In this mode, the teaching staff who are enrolled in FULT choose to complete all modules in the program or enrol in individual modules based on their preference and interest.

2. Modelling outcomes-based approach: The program shifted from mandatory attendance to an evidence-based completion model. At the conclusion of FULT, the teaching staff submit an e-portfolio containing evidence of their engagement with and completion of the learning activities associated with all five of the modules, to receive a *Certificate of*

Completion. Teaching staff receive peer feedback on their work throughout the program, and facilitator feedback upon submission of their completed e-portfolio.

3. Modelling blended learning and 'flipped classroom': The program was redesigned from a largely face-to-face model to a blended learning and 'flipped classroom' approach, to provide teaching staff with access to Moodle-based resources and tools supporting engaging online and face-to-face learning activities. By modelling a 'flipped classroom' approach, the face-to-face class time is dedicated to highly interactive group discussions and collaborative authentic learning activities, while tasks requiring reflection and conceptualisation are completed outside class time as pre- and post-activities. Through engagement in online activities on Moodle, such as annotating videos, discussion forums, and stimulating face-to-face activities, teaching staff are exposed to various tools and teaching strategies both face-to-face and online, and are able to experience the benefits of a 'flipped classroom' from the perspective of a learner.

4. Inclusivity and scalability: The program originally capped enrolment at 25 participants owing to limitations inherent in the earlier program design, which included a face-to-face micro-teaching session requiring substantial facilitator involvement and supervision. After the redesign to blended delivery, it can now accommodate up to 200 teaching staff (restricted only by teaching spaces available for face-to-face sessions). This allows for the program to be more inclusive and accept enrolments from previously under-represented cohorts, such as casual tutors, post-doctoral staff and higher degree research (HDR) students with a teaching role. The modularised structure of FULT gives teaching staff the flexibility to choose the modules that address their own learning and teaching needs based on their own specific teaching contexts.

5. Efficiency and cost-effectiveness: Owing to the scalability of the program described above, FULT moved from being a resource-intensive program offered four times a year to an efficient program offered twice a year, with one academic lead designing and facilitating each module with the support of an educational developer. Peer assessment is embedded throughout the program to ensure that teaching staff are exposed to, and have opportunities to, critique other's work. In this way teaching staff are able to self-reflect and receive adequate feedback on their conceptualisation and their learning and teaching practice throughout the program, preparing them to complete the final e-portfolio evidencing their progress and learning.

While FULT is primarily a professional development program, it is also the coursework component of the first course in UNSW Australia's Graduate Certificate in University Learning and Teaching (GCULT) described below. This has also been recently redesigned to be offered in blended and online learning modes.

Case Study 2: Post-Graduate Course Redesign

UNSW Australia has offered the GCULT primarily for teaching staff at the university for a number of years. Initially it was delivered as a fully face-to-face program focusing on a variety of topic areas such as student learning, curriculum and assessment design, and leadership in higher education. Recently, the program has been redesigned to align with the university's new blended learning strategy and provide teaching staff with first-hand online and blended learning experience in order to inform their own teaching strategies. Three of the four courses in the program are delivered in blended mode adopting 'flipped classroom' approaches. These include a combination of face-to-face sessions and online activities, limited face-to-face time is more effectively used, being dedicated to collaborative activities. Some content is delivered online prior

to the in-class sessions; in-class conversation is extended through online discussion, online peer feedback and review of course work.

The fourth course has been redesigned for full online delivery to provide teaching staff in the program with an opportunity to experience the flexibility of online learning while continuing to be part of a learning community with other teaching staff enrolled in the same course. In addition, while this course has always focused on curriculum and assessment design, as part of the redesign the focus has shifted to explore the use of online technologies to enhance course design. Teaching staff in the course are encouraged to consider how online technologies, whether in fully online or blended mode, could enhance their own students' learning experience or make their own teaching more efficient and effective. While the three other courses in the program provide an opportunity for teaching staff to experience blended learning, the shift in focus in this fourth course, provides an opportunity to critic the advantages, challenges, and considerations of online technologies through exploring key literature, frameworks, and case study videos of various teaching staff sharing their own experiences with online learning technologies.

With no required face-to-face sessions, the course relies heavily on guided discussion forums to help build and maintain a community of teaching staff learning together. Key questions are posted in the discussion related to the course content, asking teaching staff to provide convincing arguments or raise questions and considerations related to their own teaching practice, helping them to construct and develop their understanding of online and blended learning. This design is based on a socio-constructivist theoretical approach (need reference) where the course is designed to foster discussion around the key concepts to support teaching staff development of understanding and knowledge of technology-enabled course design. To encourage the sharing of ideas and ongoing conversation, assessment in this course requires the teaching staff to ensure that their arguments are based on multiple perspectives, including that of their peers. Following an 'assessment as learning' approach, where assessment tasks are explicitly used as learning tasks, the assessments in the course are designed to build the teaching staff understanding by applying the concepts introduced in the course to their own teaching context. For example, the first assessment asks students to explore learning and teaching strategies and policies specific to their own faculty or school related to open and institutionally-supported technologies, in order to ensure that their teaching and course design adheres to any specific requirements or expectations. The second assessment subsequently then focuses on the review of teaching staff own course design in order to identify areas that could be enhanced by online technologies, while the third and final assessment asks teaching staff to apply changes to their course based on content explored in the course, their own literature exploration, and discussions with one another. While it is not required that they redesign their course using online technologies, it is expected that they provide an evidence-based argument for their informed decisions. Finally, while not required, the teaching staff in the course are encouraged to enrol in a massive, open, and online course (MOOC) offered during the same time, providing an opportunity to explore the same weekly concepts, engage in discussion with international educators, and be exposed to further other resources and online activities. The following section describes the design and intent of this particular MOOC.

Case Study 3: Building capability and confidence via a MOOC

In 2014, UNSW developed a massive open and online course (MOOC) called Learning to Teach Online (LTTO), based upon the award winning open educational resources of the same name http://bit.ly/ZbQfmK. The original resources received the 2012 MERLOT Award for Exemplary Online Learning Resources and the 2011 Ascilite Innovation and Excellence Award. Whilst the LTTO MOOC was open for all, it was also designed to provide professional development in online

course design to UNSW teaching staff. The eight-week open course was aimed at teaching staff with little or no online teaching experience, or those wishing to expand their existing knowledge. The course was designed to help teaching staff to develop an understanding of effective pedagogic principles related to online and blended teaching practices, rather than focusing upon instruction in the use of specific technologies. In this way, the MOOC enabled teaching staff to adapt the knowledge and skills explored to their own teaching contexts via a flexible, reflective and personally relevant learning experience. Specifically, the LTTO MOOC design was underpinned by principles derived from the process of narrative inquiry (Chase, 2008; Webster & Mertova, 2007) and constructivism (Girvan & Savage, 2010; Gold, 2001), both of which focus on the importance of personal experience in the learning process. The structure of the MOOC was such that it encouraged teaching staff to define their own learning goals and to reflect and draw upon their own personal stories about their teaching practice and contexts. In effect, their stories became central to how they constructed their learning, and how they engaged with the course and one another.

The course was broken into eight modules, each exploring fundamental strategies and pedagogical principles of online learning and teaching practice.

1. Why is online teaching important?
2. Open and institutionally supported technologies
3. Planning online learning
4. Online learning activities
5. Online assessment strategies
6. Online resources
7. Engaging and motivating students
8. Evaluation strategies

Each module comprised a video introduction explaining the learning outcomes, a video and a more detailed document examining the key concepts being discussed, along with supporting case studies demonstrating how different teaching staff apply the principles in practice. Teaching staff were also guided to specific discussion forums and resources that support each module. They could choose to undertake all modules of the course at any time or in any order that suited them, as they did not need to engage with the course sequentially. Teaching staff were also not required to undertake all modules and could simply focus upon topics that related to their interests or needs. As long as they undertook enough activities and assignments (as explained below) to achieve a passing grade, they could complete the course with a high degree of flexibility and freedom as to which content they engaged with.

Each module had a set of three multiple-choice and short-answer activities designed to facilitate self-reflection about their existing skills, confidence, perceptions and understanding of key pedagogical concepts. The activities were designed to help teaching staff to develop strategies to apply the knowledge they gained in the course to their own teaching practice. At the conclusion of each activity, teaching staff were provided with feedback containing explanations to reinforce their learning with data visualisations of their individual responses comparing their answers to those of the rest of the cohort. Finally a series of personalised resource suggestions were based on individual answers to questions. In this way, the activities were highly personalised and not content driven, but centred on their personal experiences and knowledge, allowing them to build their professional capacity in ways that were relevant to them.

The MOOC also contained a series of three assignments designed to enable teaching staff to apply their knowledge to the design of an online learning activity that they could use in their own teaching practice. Through these assignments, teaching staff analysed their existing teaching practice or course design, applied new knowledge to develop supporting online teaching

strategies, and reflected upon the benefits and risks associated with their final design. Teaching staff were also asked to demonstrate their understanding of the principles involved by undertaking reviews of peers' assignments and providing feedback. It was through participating in these assignments, that teaching staff were truly able to personalise their learning experiences by introducing and analysing their own teaching stories, then evolving these personal narratives through the synthesis of new knowledge about online teaching practices.

PRINCIPLES OF EFFECTIVE ONLINE AND BLENDED PROFESSIONAL DEVELOPMENT

The following principles of effective professional development for blended and online learning emerged from our experiences in redesigning and implementing professional development (PD) programs to address the need to enhance the digital literacy of teaching staff and to develop their capability in designing and delivering blended and online learning:

1. PD should embody the principles of blended and online learning. The design and process should provide opportunities for teaching staff to gain understanding of the theoretical rationale and practical applications of blended and online learning.

2. The PD course activities should provide authentic blended and online learning opportunities for teaching staff to give them first-hand experience of the benefits of integrating technology in their learning, which can eventually be transferred and applied to the design and delivery of their own courses.

3. The design of PD programs should be theoretically underpinned by constructivism (Dewey, 1916; Bruner, 1996) and socio-constructivism (Vygotsky, 1978; Maddux, Johnson & Willis, 1997) to allow for the co-construction of knowledge whereby teaching staff learn from one another and collectively develop their understanding of online and blended teaching strategies and approaches. As one of the major issues in blended and online learning is the sustainability of interaction (Wang, 2010), the design of the PD program should embrace collaborative problem-solving and sharing of best practices, thereby encouraging teaching staff to engage with one another to discuss and collaboratively overcome the challenges associated with designing their own online and blended learning courses.

4. PD should be aligned with criteria and standards for effective blended and online learning course design and delivery to model best practice. The authors are currently developing and validating criteria and standards to guide a more personalised blended and online learning course design to ensure quality and to form the basis for professional development and practice.

5. Multiple complementary PD programs for blended and online learning should be available to give options to teaching staff in terms of topics, modalities, and skill levels to provide a more personalised approach.

CONCLUSION AND FUTURE DIRECTIONS

By designing and offering three complimentary yet distinct teaching development opportunities, UNSW Australia demonstrates its commitment to fostering technology acceptance amongst teaching staff alongside developing their digital literacy skills, knowledge, and perceptions of effective technology-enabled course design to meet the global challenge of delivering effective online learning opportunities for students. While the three case studies reported in this paper are

currently being evaluated, (*against criteria on personalisation of blended or online learning which looks into the delivery of the content, availability of course resources and formative assessment, selection of learning activities, utilisation of technology to meet teaching staff needs and expectations, provision of learning and digital literacy support, design of assessment tasks, and teaching staff engagement in self and peer assessment*), the intent of this is paper is to disseminate the strategic approach at one higher education institution to implement a threefold, multifaceted online and blended learning approach across the campus to help inform the strategies that other institutions may adopt. The results of the evaluations will inform future review and redesign of all three initiatives as needed by offering insights on the effectiveness of the initiatives for enhancing online and blended learning practice. The evaluation strategies use a range of data collection methods as appropriate for each unique case study such as learning analytics on teaching staff actual engagement with the online resources and activities, surveys and focus groups to better understand their experience and change in perceptions and teaching approaches, and the course instructor's or program leader's own critical reflection on the professional development opportunity from multiple lens or perspectives.

While the road towards the realisation of UNSW Australia's move to mainstreaming online and blended learning through enhancing the digital literacy of teaching staff still has a long way to go, other institutions and countries, both developing and developed, can learn from its experience in redesigning professional development programs and courses that embody the principles and practices of blended and online learning.

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