Us and IT: Capacity-building for blended learning: An intersection between educator, pedagogy, and technology

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When Victoria University (VU) Australia, adopted a new learning management system (LMS) as part of its Blended Learning Strategy and Operational Plan in 2014, it introduced a range of support structures including a staff support and training program. Complementing this, the *Graduate Certificate in Higher Education* (the course providing professional development for early career academic staff) offered an elective AET4010 *Blended Learning Design and Development* fusing the pedagogical and theoretical aspects of blended learning to foster teaching as a design science.

In this study we investigate the effectiveness of AET4010 in developing participants' capacity to design and, develop blended learning. In this paper we report on the data from the first stage of this investigation. Data is derived from assessment rubrics. Complementary qualitative data will be collected in the second stage via interviews conducted after the participants complete the unit. We analyse our findings against the JISC Building Digital Capability Framework mapped to the UK Professional Standards Framework. This Framework identifies early career academics' capabilities (Associate Fellows). The emerging findings indicated the value of capacity building through a structured unit of study enabling participants to experience learning from their own learner's standpoint while reflecting on pedagogical perspectives and 'teaching as design'.

Introduction and context

Victoria University (VU) Australia, has principally been an on-campus institution. It has no history of distance learning for large-scale off-campus study, nor extensive use of educational technology. In 2014 VU implemented a blended learning strategy as part of its institutional vision to offer flexibility of time, place and pace of learning and to personalise learning. Specifically, the strategy aims to:

- enhance student access, experience, engagement and outcomes through an effective blend of face to face and digitally enabled learning opportunities; and
- apply and maximise blended learning opportunities in making our offer to students flexible across pace, place and mode (Victoria University 2014, p. 1).

While the strategy uses proven technology such as a learning management system (LMS) and associated tools, it acknowledges that successful implementation requires staff to "improve and extend digital literacies through engagement with authentic formal and informal professional development" (Victoria University 2014, p. 2). This points to a need for a specific skills set that facilitate "the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies" (Garrison & Vaughan, 2008, p. 148). The development of these teaching design capabilities in staff is a key factor of successful adoption of learning technologies (Laurillard, 2012). Garrison and Vaughan add that blended learning designs must "be informed by evidence based practice and the organic needs of the specific context" (2013, p. 14). This underscores the need for a purposeful approach that focuses primarily on VU's student cohort and the transformation of teaching for learning.

Specialised staff were hired and assigned to Colleges across the university to facilitate the implementation of institution-wide blended learning. Complementing this, a variety of ongoing training and professional development sessions continue to be offered on a range of topic areas including operational training of the LMS, drop-in sessions, guest speakers in lunch time show-and-tell sessions, and showcasing of 'exemplary' practice – all supporting the adoption process delivering 'just in time'

support (Wilson & Stacey, 2004) grounded in the VU context.

Formal study via a Graduate Certificate

Complementing such timely support, VU offers a *Graduate Certificate in Tertiary Education* (GCTE). This is a practice-orientated accredited course, embedded into the VU professional development program (free for all VU academics) that contextualises capacity building within a higher education learning and teaching / pedagogical framework. The GCTE includes an elective unit, AET4010 *Blended Learning Design and Development*, addressing theoretical concepts and technology based approaches in education. This unit builds upon a design science understanding of teaching through the application of the backward design curriculum model (Wiggins & McTighe, 2005). Participants develop their foundation for 'teaching as design' (Laurillard, 2012) through engagement with activities and assessment in the unit. This design approach is an intentional complement to the technical skills development undertaken elsewhere in the University.

The GCTE participants, largely early-career academics consisting entirely of VU staff, mirrors the university's student cohort; they are drawn from diverse backgrounds (in 2017, 47% were born outside Australia and 35% speak in a language other than English in their home). A large proportion of the GCTE participants are likely to be the first in their immediate family to hold a teaching position in this sector as 59% of their parents did not complete a university course. These two facets combine to indicate limited cultural capital in a new professional domain, as these participants are yet to develop the "long-lasting dispositions" (Bourdieu, 1997, p.47) embedded within the wider academic community. More critically, these early career academics, (those with less than seven years teaching experience (Bexley, Janes, & Arkoudis, 2011)) represent the future of VU and therefore our collective priority. Growing the cultural capital of early career academics through continuing professional development (CPD) "is likely to lead to a more lasting and progressive impact" than those who are already established in academe (Englund, Olofsson & Price, 2017, p.84). Our goal therefore is to connect their staff development to current institutional needs and leverage appropriate use of technology through CPD.

Most GCTE participants complete two core units before commencing AET4010. These units provide a foundation for teaching practices, designing curriculum and assessing learning. A student-centred approach is recommended as a foundation for effective educational technology integration (Englund, et.al., 2017). AET4010 explicitly focuses on blended learning and promotes deliberate engagement with CPD opportunities within and beyond the unit. The unit requires participants to engage with a conceptual framework and pedagogy before working with the technology.

The rise of institutionally sponsored educational innovations has been a catalyst for many institution-specific CPD models (Graham, Woodfield & Harrison, 2013). For AET4010, the most pertinent aspects of these models is to (a) focus on participant challenges, and (b) support justified modifications as a basis for re-examination of the institutional model. These two factors increase the individual relevance of the CPD to each participant, as well as providing an evidence-base to increase institutional relevance to develop a context-dependent maturation of the innovation.

The AET4010 model of capability development mirrors aspects of the Concerns Based Adoption Model (CBAM) (Hall & Hord, 2001) and echoes Laurillard's advocacy of setting feasible goals where educators are "able to discover how to exploit its [technology's] potential more effectively" (2012, p.84). Participants elaborate and contextualise the blended learning innovation suitable for *their* students; in effect, they configure the institutional innovation for their discipline in recognition of their student backgrounds and learning needs (based on CBAM). Individual capacity building is based on identified personal challenges. The task is designed to be collaboratively addressed with a colleague (not necessarily seen as an expert, emulating a zone of proximal development (Vygotsky, 1978)), following Laurillard's (2012) Inquiry model.

This purposeful institutionalised approach to CPD in the GCTE ensures that it is an ongoing activity, not undertaken only if there is spare time from regular teaching duties. The AET4010 curriculum deliberately extends participants' limited cultural capital in this new professional domain enabling direct links to their teaching practices through scaffolded assessment tasks that require them to plan, design and develop a constructively aligned blended learning module for an identified context.

Connections to international frameworks

In this paper we locate AET4010 blended learning capacity building within the UK Joint Information Systems Committee (JISC) Digital Capability Framework (JISC, ca. 2015) against which the UK's Professional Standards Framework (UKPSF) has been mapped - see Tables 1 and 2. This Framework is used in the UK and in a number of Australian universities to enhance educator capabilities in the sector.

The JISC among other things attempts to

- develop the capacity to support and develop others in digitally-rich settings, to teach/work in a teaching or curriculum team, to design learning opportunities, to support and facilitate learning,

to be pro-active in peer learning, all while making effective use of the available digital tools and resources. An understanding of the educational value of different media for teaching, learning and assessment; an understanding of different educational approaches and their application in digitally-rich settings (JISC, ca. 2015).

Method

The capacity building process was investigated through a two-phased, mixed methods research approach. It involved examining AET4010 through multiple approaches to maximise the strength and accuracy of all data as advised by Ayiro (2012). Ethics approval was granted for this study under the University Ethics Committee (reference number HRE17-002). This paper reports on phase 1, the quantitative aspect of the study.

Data for this phase of the study was drawn from the whole class (33 participants). Initially we examined assignment rubrics to identify criteria related to the Digital Learning and Technology Framework (Table 1). After students had completed the relevant assessment tasks, we examined their rubrics to determine patterns of capability development across the class. This data was then extracted from the rubrics and mapped against the Framework (Table 2). In the second phase of the study, this data will be complemented by qualitative information obtained from interviews conducted after the participants complete the semester.

Findings

The data derived from the three AET4010 rubrics for assessment tasks were mapped against each of the corresponding Digital Learning and Teaching elements of the JISC Digital Capability Framework. Linking to CPD within and beyond the unit is a key AET4010 outcome. Tables 1 and 2 draw attention to aspects relevant to early career academics as identified in the United Kingdom Professional Standards Framework (UKPSF). Table 1 illustrates how participants engage with the three JISC-identified criteria for CPD as "Building digital capability for new digital leadership, pedagogy and efficiency" (JISC, ca. 2015).

Table 1: Digital learning and CPD (learning) - Maps to UKPSF: Areas of Activity –A5

JISC statement	AET4010 support of blended learning capacity-building
1. Use digital networks and resources to undertake professional development as a teacher.	The unit provides a community of inquiry in a blended learning environment. It requires structured peer feedback on developing blended learning modules (Assignment 3.) *Findings: All resources including synchronous and asynchronous communication are available via the LMS, complemented by three optional face-to-face workshops.*
2. Identify and take up opportunities for professional development in digital learning, teaching and assessment.	Participants identify learning goals in relationship to blended learning and are directed to take advantage of the wide range of informal professional development available within the University (Assessment 3). *Findings: 82% gained a 'credit' or above for this activity*
3. Reflect on personal learning, teaching and assessment practices with technology, using digital tools to support reflection where appropriate	Participants reflect on how collaboration enriched their personal learning in respect to technology-based teaching and assessment (Assessment 2) *Findings: 88% gained a 'credit' or above for this activity.*

Evidence of how AET4010 builds capability for blended learning is mapped in Table 2, based on the assessment rubrics. Findings indicate that AET4010 builds capabilities in nine of the 14 JISC elements.

Table 2: Findings - Digital teaching practices mapped to UKPSF: Core Knowledge - K1-K5

JISC statement	AET4010 support of blended learning capacity-building
1. Design and plan courses of study to include digital issues, activities, opportunities and outcomes.	Participants design and develop a course-based module (Assignment 3), informed by bended learning (BL) frameworks (Assignment 1). *Findings: 75% gained a 'credit' or above for justified BL framework with an additional 16% gaining a pass.*
3. Design and plan digital learning and assessment activities within courses of study.	Participants design a constructively aligned module of study including learning activities and assessment tasks. The strengths and limitations of their selected blended learning approach are argued (Assessment 2 Part B). *Findings: 62% gained a 'credit' or above for this activity with an additional 30% gaining a pass.*
6. Use digital technologies to support in-class learning (eg polling tools, live curation/	Participants propose appropriate digital tools (eg. polling and learning analytics) to support online and face-to-face components (Assessment 2 Part A and Assignment 3). *Findings: 83% gained a 'credit' or above for the design, and 74% gained a 'credit'*

JISC statement	AET4010 support of blended learning capacity-building
sharing tools, digital presentation).	*or above for developing the integrated design as their Assignment 3.*
7. Guide learners to use their own digital devices, services and apps in support of learning, in class and independently.	Participants include appropriate guidance when digital devices and apps are used to facilitate learning (Assessment 3 Part C) *Findings: 65% gained a 'credit' or above for this activity.*
10. Source appropriate digital learning resources, assessing for eg accuracy, relevance, accessibility, diversity, effectiveness.	Participants implement accessibility and copyright protocols of sourced digital learning resources (Assessment 3 Part C). *Findings: 81% gained a 'credit' or above for this activity.*
11. Develop and adapt digital learning resources according to learners' needs, with an awareness of licensing issues.	As per 10 above.
12. Work with other professionals eg library/learning resources, e-learning, learning support, to support learners' digital capabilities.	Participants identify relevant professionals across the University and draw upon their expertise to enhance their own digital capabilities (Assessment 2 Part B). *Findings: All participants identified relevant professionals from across the university to progress their work.*
13. Use digital tools in support of assessment (eg quizzes, polls, self-assessment, peer assessment, e-portfolio, peer review), & to give feedback (eg via. annotations, audio tracks).	Participants create formative assessment with embedded feedback and feedforward advice using appropriate tools. (Assessment 3 Part C) and peer reviewed colleagues' assessments prior to submission (Assessment 3 Part B). *Findings: 69% gained a 'credit' or above for designing such formative assessment tasks, with 82% gaining a 'credit' or above for peer reviews.*
14. Design assessment activities to progress and demonstrate learners' digital capabilities.	Participants design assessment activities incorporating purposeful, differentiated scaffolded activities to support assessment. (Assessment 3 Part C). *Findings: 69% gained a 'credit' or above for this activity.*

Discussion and future implications

Rubrics for all three assessments were analysed. Assessment 1 introduced students to a range of evidence-based blended learning theoretical frameworks. Assessment 2 required constructively aligned pedagogical design for active learning based on these frameworks. Assignment 3 implemented that design embedding peer review of the draft development. Overall participants scoped learning for pre-class, in-class and online settings demonstrating some thoughtfully constructed pedagogically sound, blended learning designs.

As per Table 2, participant familiarity with the tools indicated good up-take of the university tool-based workshops offered over the past two years, and confidence in selecting appropriate tools (83% received a 'credit' or above in this area). However, an unexpectedly low 65% included instructions for tool-use in their assignment which was contradictory to their own requirement for instructions at the beginning of the course. As greater familiarity with the LMS was developed, the need for instructions waned. Seventy-five percent of participants also demonstrated a high level of conceptual engagement with relevant theoretical frameworks (receiving a 'credit' or above). However, participants' understanding of how to design constructively aligned learning activities and assessment tasks for blended learning environments were lower (62% receiving a 'credit' or above). In contrast, 82% of participants provided improvement-orientated peer feedback, while a smaller proportion (74%) implemented that advice. Overall, participants found extending their knowledge of 'teaching as design' was more challenging than learning to use the technology, or revising their work based on peer feedback.

At the time of writing this paper, participants were yet to implement and evaluate their newly created blended learning modules. Data from the phase 2 interviews will throw further light on these issues.

Conclusion

Our study suggests a need to extend institutional investment in developing pedagogical capabilities in relation to technology use. A common challenge in university-wide blended learning initiatives is supporting staff to implement sustainable blended learning strategies. At VU, AET4010 is one effort to support a resilient, knowledgeable workforce capable of rising to the opportunities afforded by technology-enhanced learning. Institutions have a responsibility to develop pedagogical capabilities, technological skills and 'teaching design' of early career academics' to support the learning needs of increasingly diverse student cohorts. Academics with such capabilities can engage learners when equipped with a solid foundation of pedagogical strategies – strategies that can continue to be realised in this fluid technological environment.

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