

The three pillars to building staff capability to create digital learning experiences

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Many institutions are grappling with building staff capability in the complex task of designing and creating high-quality, technology-rich digital learning experiences informed by pedagogy. This paper provides an overview of a pilot program with two interactions implemented at the University of Melbourne called the Digital Learning Design (DLD) program. Focused on building Library's organisational capability the program was built on three pillars of staff capability; deep knowledge of learning theory, learning design principles and skills in selecting digital technologies. The DLD design drew on research in change management, effective capability building as well as best practice in developing digital technology skills. Learners experienced the learning theories taught with the program design including the concepts of the flipped classroom, authentic learning and community of practice. This paper showcases an innovative and successful approach to addressing the issue of enduring staff capability to create digital learning experiences.

Keywords: digital learning, capability building, staff professional development, global challenges in education, digitally enabled learning for a global society.

Introduction

This paper discusses the implementation of two iterations of a professional development (PD) program piloted at the University of Melbourne in 2014-2015 called the Digital Learning Design (DLD) program. The DLD focused on building the University Library's organisational capability for designing digital learning resources. The program was used to facilitate the launch of a new model of liaison librarianship, including the creation of new roles specialising in learning and teaching, during a period of significant organisational change. The program was designed to build capability in the three pillars of knowledge needed to create digital learning resources; knowledge of learning theory, learning design principles and educational technologies. Evaluation of the program has shown its overall design to be highly effective.

Literature review

Staff frequently are often comfortable with student-centred pedagogies in a face to face context. However, this often does not correlate with student-centred practice online (Owens, 2012). This is exacerbated by the fact that digital learning PD commonly separates the teaching of learning theory, learning design principles and technology skills into different programs. Staff are expected to coherently meld this disjointed PD when creating digital resources. Staff PD needs to address both the technical and pedagogical needs coherently in order to truly capitalise on the affordances of educational technologies (Owens, 2012).

Staff PD on digital technologies is often characterised by fragmented, short, technology-focused workshops. These workshops do not address the ongoing pedagogical change needs of educators to teach with technology. Longer programs with follow-up that explicitly teach pedagogical practice is needed to reform teaching practice (Fullan, 2009, Lawless & Pellegrino, 2007). PD also needs to include authentic learning opportunities, peer learning and consideration of the working context (Macdonald & Poniatowska, 2011).

Often staff have no experienced learning in a digital environment, despite being requested to design for this platform. Authentic experience of digital learning as a learner is needed to deepen their understanding of online pedagogies. This could include learning through implementing real projects or authentic engagement with digital learning (Macdonald & Poniatowska, 2011).

Furthermore, staff PD in digital technology is commonly designed with didactic teaching practices, rather than the student-centred pedagogical practice staff need to draw upon when implementing technology. Student-centred learning practices include 'flipped classroom' learning design, peer review activities, active learning, authentic learning and project based learning - all characteristics of constructivist and inquiry based learning approaches (Aditomo, Goodyear, Bliuc & Ellis, 2013). Effective staff PD design should model the student-centred practices that staff are requested to implement, as authentic experience of these pedagogies deepens learning engagement with them (Matzen & Edmunds (2007).

Our understanding of how to best use technology to effectively impact on students outcomes is rapidly changing and is constantly being tested and redefined just as the digital technologies themselves are rapidly updating. For staff to adapt to this changing understanding, Wegner's (1998) 'community of practice' approach allows staff to discuss and create meaning to these changes (Armfield, 2011).

Program Learning Design

The DLD's design was underpinned by three pillars of knowledge; developing capability for learning theory, for learning design, and to support the effective use of digital technology. A key component, and deliberate pedagogical strategy, of the DLD was the organization of participants into small teams to work on authentic digital learning projects. Most teams were developing digital learning resources for particular subjects that they were already supporting, converting face to face delivery into the online environment. To support the three pillars, the learning objectives for the program were that participants would:

- Have a foundational understanding of selected pedagogical approaches to blended and online learning
- Have the skills to design an online digital resource using learning design principles
- Know how and when a variety of technology tools might be used to support online teaching and learning
- Have designed, developed and delivered an online or blended digital learning resource

The DLD program was delivered over a five month period and included five face-to-face workshops, online learning modules, a peer review process of learning design plans (LDPs) and the completion of the authentic learning project. The program's learning design and activities modeled the learning theory and pedagogy that the program was asking staff to adopt.

The DLD was designed using the concept of the 'flipped classroom' with participants engaging with the didactic teaching aspects of the program via the online self-paced modules. The online modules introduced participants to core educational theories, learning design principles and frameworks for selecting technology tools. The five face-to-face workshops were designed on the constructivist principles of active learning. Key concepts were discussed and learning was applied through the creation of the LDPs and final learning resources for each project.

Participants peer reviewed each other LDPs using guiding questions that reinforced the theory. As part of the program evaluation, experts analysed both the peer reviews and LDPs to assess the quality of engagement with core concepts. Community was further encouraged via a Yammer group designed to support skill development and the knowledge of digital technologies. After the final workshop, there was a two month period where project teams developed their digital resources. This period concluded with a 'Showcase' event where each project presented their completed digital learning resources.

Program Evaluation

Kirkpatrick's (1998) Four Levels of Evaluation model was used to design the program evaluation. Kirkpatrick's model asserts that evaluation of PD requires analysis of: participant reactions, learning, behaviours and results. Reactions were measured through post-program surveys and focus groups (pre and post), evidence of learning was found in the focus groups (pre and post) as well as expert analysis of peer review feedback, behaviors were evaluated via expert review of LDPs and expert

evaluation of final products. Due to the timeframes associated with the program and publication, no formal data has been gathered on the 'Results' level.

This evaluation draws on a mix of qualitative and quantitative data, including:

Focus Groups: Two rounds of focus groups with participants were conducted; before the program commenced (n=7) and at the conclusion of the formal teaching component of the program (n=4). Focus groups were used to explore changes in participants' attitudes to teaching, learning design and the extent to which knowledge of pedagogies and learning theory informed their teaching. Thematic analysis was used to code data.

Post-Program Surveys: Post-program surveys were used to obtain feedback from participants on the perceived strengths and weaknesses of the course content and design.

Analysis of Participant Peer Review Feedback: Feedback from the peer review activity was analysed against the LDPs by the two university learning designers (LDs). A rubric was used to analyse the feedback on each of the peer review questions, rating the participants' engagement with course concepts, their use of appropriate concepts and terminology and their ability to apply knowledge of learning design principles to critique the LDPs.

Expert Review of Learning Design Plans and Digital Learning Resources: Expert review was also sought from the university LDs on the completed LDPs and the final digital learning resources. The LDs used the same set of peer review questions to identify areas of strength and weakness in the plans and rate the overall quality of the learning designs. This feedback, discussed in the Program Outcomes section, was used to both evaluate the program and provide feedback to participants about their learning and the quality of their learning designs.

Discussion

Reactions

The focus groups and post-program surveys revealed strong reactions from participants about the content and structure of the course. 70% of pre-program survey respondents identified the program's blended format and face to face workshops as being a key strength. Roughly 60% identified the project-based approach to learning as another key strength, while 50% mentioned the collaborative, collegial nature of the program. One survey respondent identified: "The opportunity to work on a practical project, to gain technical skills, to collaborate and share ideas, skills and perspectives with colleagues, and to learn from each other" as a highlight – emblematic of responses across the cohort. Similar sentiments were made by three of the four participants at the post-program focus group, where the group agreed that the workshops and application of learning to a real project facilitated the best learning.

Learning

In terms of learning, both the pre-program surveys and focus groups suggested that most staff commenced the course with very limited knowledge of learning theory and learning design principles. The post-program focus group participants unanimously agreed that their learning had progressed significantly during the course and that the course had achieved its intended learning outcomes. The expert ratings of peer review feedback and LDPs provided convincing evidence of this learning. Figure 1 below illustrates strong agreement between the expert reviewers and the peer reviewers, suggesting that participants have acquired the expected skills and knowledge of core educational and learning design concepts.

Behaviour

Expert ratings of the LDPs shows that participants have been able to successfully apply their learning to the production of new, high quality, pedagogically and technologically sound digital learning resources. This review rated 70% of the LDPs as proficient, and 20% at an 'excellent' standard. The expert reviews looked at the application of core course content including key learning design principles and the suitability of technologies.

Expert Review of Peer Review Feedback - Engagement with Course Content and Learning Design Principles

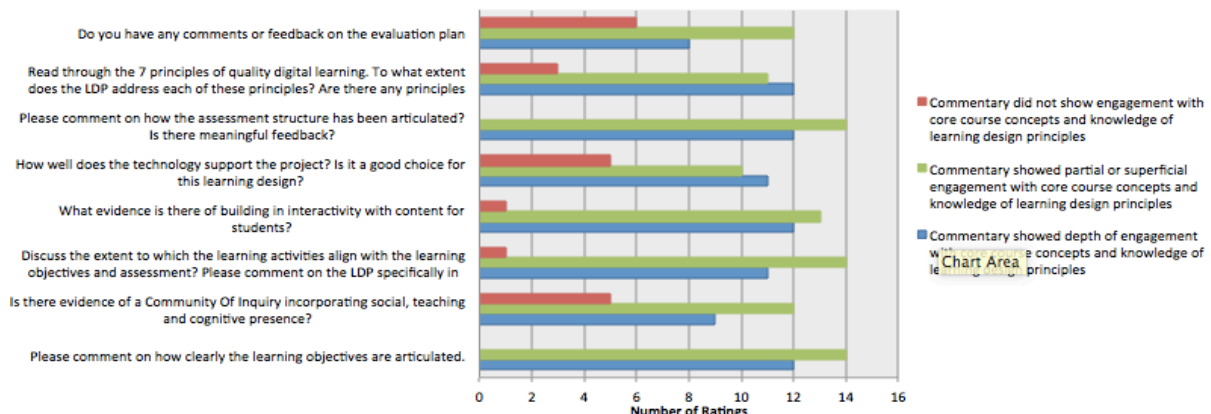


Figure 1: Expert Review of Peer Review Feedback

Program Outcomes

The DLD has achieved a measurable increase in the Library’s capacity to produce high-quality, pedagogically-sound and curriculum-based digital resources as evidenced by both participant feedback and evaluation of the digital learning resources created during the program. The DLD project has demonstrated the effectiveness of an authentic, blended, research-based approach to PD. Outcomes for the DLD included:

1. An effective program designed in collaboration with two university groups and based in research
2. Creation of student-centred digital resources that focus on developing students' scholarly literacy skills
3. Design of digital learning resources informed by research and learning theory
4. Learning design and digital objectives created through partnerships with the subject coordinators in faculties
5. Team building in the library with the thirty librarians involved in each iteration
6. The successful implementation of a new model of library liaison

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Note: All published papers are refereed, having undergone a double-blind peer-review process.



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