

Experiences in developing an online teaching tool in support of evidence-based practice

Glenda Romey, Client Services & Liaison Librarian; Tania Celeste, Biosciences Liaison Librarian, The University of Melbourne

Presented at the 12th Health Libraries Inc. Conference, Oct 23rd 2015.

Introduction

During early 2015, the University of Melbourne library initiated a staff development program to build librarians' skills and competencies in the provision of digital literacy to support teaching and learning programs. The teaching and learning librarians from the biosciences team harnessed this opportunity to develop an online teaching tool dedicated to evidence-based practice (EBP) within the context of information literacy.

Through working with the academic staff and students within the health sciences cohort, the potential to add value to an existing program was identified and acknowledged, allowing for the development of a teaching aid in order to practice and interpret PICO questions.

The librarians undertook an online training program in elearning theory provided by Epigeum, and also elected to increase their skills in areas including the functionality of the learning management system (LMS) and use of software such as Adobe Captivate. The program enabled librarians to broaden their understanding of pedagogical theory in teaching within an online environment, and encouraged collaboration with support service staff to produce the content for the teaching aid, in line with the teaching objectives and the University of Melbourne Scholarly Literacy Framework.

The intention of producing a reusable tool is to enable the customisation of the questions to suit each cohort, so that it may be incorporated into teaching programs across the Faculty of Medicine, Dentistry and Health Sciences (MDHS). Following the introduction of the teaching aid into subjects in nursing and physiotherapy courses during second semester 2015, it is anticipated that further schools will embrace the tool as a support mechanism for students by first semester 2016. Our discussion will cover the learning outcomes of the project, and challenges, lessons learnt and recommendations.

Background

Liaison librarians in the biosciences team have worked closely with academics to establish scholarly literacy in academic teaching programs. The team would typically develop resources in response to teaching needs as determined by academics to teach information literacy within their areas of responsibility e.g. nursing liaison to nursing students, physiotherapy liaison to physiotherapy students. Although the quality of the work was high, it resulted in the duplication of resources and the use of considerable time to deliver face-to-face lectures and workshops. Being a relatively small team supporting the scholarly literacy requirements of a faculty cohort, we needed to come up with efficient ways to deliver high quality teaching and learning.

As librarians with a teaching and learning specialisation we are strongly encouraged to adapt our teaching to utilise current methodologies in the pursuit of quality education whilst embedding information literacy into academic programs. The University of Melbourne encourages the development of a teaching and learning skill-set based on evidence, best practice and the

following of good pedagogy as demonstrated through various teaching programs and articulated in its goals, plans and strategy documents. This includes the University of Melbourne Strategic Plan 2015–2020: Growing Esteem (3), and the University of Melbourne Digital Learning Strategy (4). The university library also mirrored the strategies in its own goals within the Melbourne's Scholarly Information Future (7), as well as the development of the Scholarly Literacy Framework (5). Furthermore the university library provided the opportunity for librarians to undertake the Practical Learning Design program (PLD) in late 2014 through early 2015.

A combination of factors recognised by the team formed the catalyst for the development of a reusable tool for this particular topic – evidence-based practice and the use of PICO – within the health sciences.

The drivers for the development of a reusable tool stemmed from a range of reasons including:

- time constraints
- teaching commitments
- current consensus in the way students learn
- changes in teaching pedagogy
- the growth in EBP across health sciences
- demand from students and researchers needing assistance with EBP in individual research consultations
- support for our Scholarly Literacy Framework targets and strategies.

The Practical Learning Design (PLD) program

The Learning and Teaching Liaison staff in the MDHS team (along with the newly incorporated veterinary and agricultural sciences team) took the opportunity to enrol in the Practical Learning Design Program (PLD) run jointly by Scholarly Information and Learning Environments. The program ran from December 2014 through to mid-April 2015.

The PLD program provided a platform that would support the team in the creation of the reusable teaching and learning tool, covering the many elements on developing digital resources. Elearning and pedagogical theory, design, technology and teaching theory and practice were explored with particular reference to teaching in higher education. In addition to the pedagogical program, we undertook training in the use of relevant software tools and applications such as Adobe Captivate, as well as the various resources within the Learning Management System (Blackboard) including designing tests and quizzes. As we know there is an array of resources readily available including many freeware tools, and we were selective in which tools we utilised.

During the course we explored many learning theories and pedagogical approaches including digital learning theories in higher education. We especially focused on constructive alignment, an outcomes-based teaching and learning framework (1), in which teaching and learning activities and assessment tasks are systematically aligned to the intended learning outcomes.

As a team we were then challenged to apply our newly acquired knowledge in the theory of teaching to our practical knowledge of EBP and translate it into an online learning resource. We learned however, it is important not to have the digital resource in mind at first. It was the pedagogical theory, or essentially the question: how will students learn EBP and PICO best? It was decided that a scaffolded approach would be taken, which would then determine the tools and resources utilised and the content selected. This involved planning and the setting out of objectives and our learning outcomes through the use of learning plans and the frameworks of learning design activities. These detailed documents enabled us to thoroughly consider context, objectives and elearning design and activities. We looked at our learning objectives or outcomes, the tasks for each learning objective or outcome, and prerequisite skills for each task. In addition

to this we considered the context of the digital resources (the learning environment they would be taught in), thought carefully about the learners we were engaging (most likely digital natives in some programs), thought carefully about the objectives (focus on what learners would be able to do on completion of the course), and planned the content for the actual activities (which considered teaching strategies, learning activities and resources and proposed technologies) and finally assessment and evaluation. This was all encapsulated through a Lesson Design Plan (LDP) which provided a prescriptive outline for the team via the PLD program.

Outcomes

We decided to focus on the part of the EBP process that involved information literacy. It was therefore pertinent that the resource be targeted as it would be inserted into a wider academic program covering EBP in its entirety. It was also important that the resource be utilised in a 'blended' class format (a combination of face-to-face teaching as well as online), furthermore it was to be used in a 'flipped classroom setting' in which users are able to view the resource in their own time with a follow-up workshop to allow for collaboration and active or deeper learning of the content in a variety of ways set by the teacher.

The team also realised that much of EBP teaching can be utilised across many of the schools in MDHS and in future across other disciplines. Therefore our resource 'Introduction to Evidence Based Practice and PICO' is a starting point, with further elements to be added as required. The Learning Management System (Blackboard) was used to set up a 'community', thereby allowing students undertaking different subjects or cohorts to link into the community simultaneously. Following the introduction of the EBP/PICO Community into subjects in nursing and physiotherapy courses during second semester 2015, it is anticipated that more schools will embrace the tool as a support mechanism for students by first semester 2016. In the coming months we will evaluate the effectiveness of the program through the utilisation of standard surveys, and informal interviews and consultation on the process with a view to make changes in time for the 2016 cohort.

Challenges

While undertaking the PLD was an overall rewarding experience, librarians were challenged by the theories of online learning and developing and applying those theories into a reusable learning tool in a short amount of time. It was a steep learning curve – learning new concepts, applications and technologies while at the same time continuing with the usual workload of an intensive first semester. Meeting regularly with a newly formed project team was also demanding by way of time constraints and commitments; but team members were collegial and supportive of each other.

Lessons learnt

The planning and timing of a new project is important, and consideration must be given to when and how it can be achieved. Generally, staff take on projects without the offer of extra resources, so allowing sufficient time for completion is recommended.

It is also important to speak to academics regarding the development of any teaching support tools. Their feedback is most relevant and useful, and we found that once created, we could continue to develop the resource with ongoing feedback. The support team from Learning Environments was also a valuable source for feedback and a contributing factor to the success of the support tool. After all, they are the people who work with the LMS on a daily basis. Fresh eyes may also find some details that require tweaking, so focus groups are a great testament to getting it right. In this instance a mixture of colleagues and students tested the tool prior to it going live.

The lesson plans and design, guided by seven principles adapted from Chickering and Gamson (2), prompted these considerations in developing digital learning resources:

1. Encourage student–teacher contact where possible.
2. Encourage cooperation among students.
3. Encourage active learning.
4. Give prompt feedback.
5. Emphasise time on task.
6. Communicate high expectations.
7. Respect diverse ways of learning, including accessibility.

Linking to organisational information literacy and education learning goals frameworks helps give authority to your resources when negotiating with academics. At the University of Melbourne we have several to refer to:

- Scholarly Literacy Framework (5)
- University eLearning strategy (6)
- Digital Learning Strategy (4).

The development of this digital resource has taught us much in the way of working as a team, project management and the development of and utilisation of technologies. However, one pertinent lesson that we have taken away from the process is to look at learning resources with fresh insight. Developing a learning resource, and in particular an engaging resource that meets teaching and learning objectives, requires a thoughtful planning process. That process relies on a thorough understanding on how students learn, rather than beginning with a choice of software or technology. The question is always: how will the students best learn from this resource and ultimately will it assist them to meet the learning objectives?

1. Biggs, J., & Tang, C. Teaching for quality learning at university [Society for research into higher education]. 3rd ed. Maidenhead, Open University Press; 2007.
2. Chickering, A.W., & Gamson, Z.F. Seven principles for good practice in undergraduate education. In: Chickering A. W., & Gamson Z. F., eds. Applying the Seven Principles for Good Practice in Undergraduate Education: New Directions for Teaching and Learning, No. 47. Jossey-Bass; 1991. p.63-69.
3. University of Melbourne. Strategic Plan 2015–2020: Growing Esteem. Melbourne, University of Melbourne; 2015.
4. University of Melbourne. Digital Learning Strategy. Melbourne, University of Melbourne; 2015.
5. University of Melbourne Library. Scholarly Literacy Framework. Melbourne, University of Melbourne Library; 2011.
6. University of Melbourne. E-Learning strategy. Melbourne, University of Melbourne; 2015.
7. University of Melbourne Library. Melbourne’s Scholarly Information Future. Melbourne, University of Melbourne Library; 2011.