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Designing Blended Learning to Foster Students' Digital Information Literacy: Developing an In(ter)vention

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ABSTRACT

How to integrate online with face-to-face learning appropriately is an often-discussed question as New Zealand tertiary institutions increasingly offer blended learning. In this context, there is a need to develop students' academic literacy, for example digital information literacy (DIL) as its significance for study (Feebery, 2013) and workplace (Bruce, 2004) success is well recognised. Embedding DIL in a blended learning course offers teachers options to create additional learning and practice opportunities for students. My research explores how blended learning design can support DIL, with a particular focus on the potential of online learning affordances. The article reports on the iterative process of creating an embedded digital information literacy (DIL) in(ter)vention aligned with the assessment in a first-year undergraduate course and focuses on the four online resources developed. The research is still in progress and this article therefore addresses the development process rather than the findings.

Keywords: digital literacy, information literacy, first year, intervention, embedded

Context

My doctoral research involves collaboration with two teachers to explore how to design blended learning that supports students' digital information literacy (DIL) in a first-year course of Bachelor of Education. We identified the course and assessment demands and responded to these by developing an in(ter)vention designed to foster students' DIL. As part of the intervention, four contextualised online resources address DIL challenges previously identified by teachers and students in relation to the online assessment, an ePortfolio.

In addition, the study responds to questions about how certain online affordances of blended learning, including accessibility and flexibility, might be used appropriately in this course, to offer individualised, flexible learning (McLoughlin & Lee, 2011). As recommended by Gosling and Nix (2011), online opportunities, such as automated feedback, are used to enhance students' learning, for example with a formative quiz that can be taken multiple times. The study also addresses related issues impacting on blended learning design, such as how expectations are set and communicated, feedback is given and how self-regulated learning is promoted and scaffolded.

Educational Design Research (EDR) offers a phased, iterative, collaborative and structured approach for designing interventions that address real life learning issues (Plomp, 2013). It complements the principles of kaupapa Māori theory, which guide my research. Kaupapa Māori is "a theoretical framework that ensures a cultural integrity is maintained" (Pihama, 2010, p. 10). In New Zealand, the principles provide guidance in how to conduct the research with Māori and for Māori in a culturally safe and appropriate manner. The six cultural values discussed by Smith (2012) and Cram's (2001) corresponding researcher guidelines have guided my behaviour as a non-Māori researcher.

In a preliminary research phase, I analysed the context and its challenges, conducted an initial literature review and developed my conceptual framework. The development phase has included iterative cycles of intervention design and formative evaluation with teachers and students. Receiving feedback from students and teachers to enhance and refine the intervention resources has been vital and ongoing in this phase. Students offered their opinions and questions in questionnaires and focus groups; the teachers have shared their thoughts through conversations, interviews and reflections. I followed up students' questions with the teachers and considered students' ideas about DIL in the development of the resources.

Students on the first year of the Bachelor of Education include a mix of mature learners and school-leavers. Based on experiences with previous cohorts, the teachers were concerned with the students' capabilities in using DIL appropriately. Both teachers are mindful of DIL's key role as part of the curriculum and in the workplace. Adding digital literacy as a new learning outcome in 2016 reflects its importance in the students' profession. My role has involved identifying with the teachers the DIL course challenges to enable us actively to address these demands through explicit acts of teaching (Benseman, Sutton, & Lander, 2005; Schwenger, 2010).

Supporting DIL through learner-centred blended learning design

Students increasingly are asked to apply information literacy online as part of their course demands. To create academic texts, students search for and read, evaluate, analyse and synthesise digital sources and also produce information online (McLoughlin & Lee, 2011). Bruce (2004) emphasises that developing DIL aligned with course assessments can support students' study success as these literacy competencies scaffold and are interwoven with content knowledge and processes.

Equally pertinent is the need for an underpinning learning design that acknowledges students' differences in terms of abilities, resources and preferences in relation to facilitation, activities and assessment (Beetham, 2013; Schwenger, 2016). The teachers and I have explored what a learner-centred blended learning design might look like for this course. Based on the existing constructive alignment of the course learning outcomes, activities and assessments (Biggs, 1999), we have considered the type of learning students require (Beetham, 2013; Mayes & de Freitas, 2013) and identified students' learning preferences and available resources (Rogers, Graham, & Mayes, 2007) before creating individual parts of the in(ter)vention.

The in(ter)vention is based on two research-based premises: firstly, to explicitly foster DIL aligned with assessment and content (Feekery, 2013), based on identified differences between course demands and student abilities. Secondly, to embed online resources in curricula that allow students to practice and receive immediate feedback by utilising online learning affordances (Gunn, 2013).

An iterative process: identifying, consulting, collaborating, drafting and responding to feedback

In the second half of 2014, academic learning support staff and the course teachers explained their concerns about gaps between previous students' abilities and the learning and assessment required in the programme. Further discussions in April and November 2015 helped to clarify the learning challenges previous cohorts faced. The results of these initial discussions align with concerns raised by students in initial interviews and focus groups, which took place in 2016 after the research gained ethical consent.

Key to my approach to creating a learner-centred blended learning design with teachers has been to listen and ask questions, including questions related to designing learner-centred blended learning with embedded DIL (Schwenger, 2016, p. 5). As I aim to support both teachers' work and students' learning experiences, clarifying my understanding has been vital as I am mostly unfamiliar with the discipline content. I am continuing to amend the resources based on formative responses from staff and students. The work has been fluid and organic, conducted mostly through personal conversations and emails.

The teachers feel strongly about supporting their students and are aware of their differences and their varied abilities. To find our starting position, we considered the learning outcomes and identified the DIL course practices required. Part of my work has been to find out how the in(ter)vention can complement existing resources such as institutional online learning resources and library clips to avoid repetition. We have discussed in both semesters how the new resources can be used face-to-face with students and then followed-up online to provide an optimal learning experience for students.

The initial underpinning process, *Using information to develop an ePortfolio*, is available for students on the course page with reflective questions at each step. The four customised resources include the process descriptor, a scenario/case study and a formative quiz to practice DIL for the ePortfolio and a one-pager of the process with pop-up questions. Opportunities are provided for students to experience and reflect upon using DIL in situations where they need to create new information (Hugh & Bruce, 2012). Furthermore, the embedded resources allow students to practice DIL in a safe environment, as recommended by Cooke (2016).

The teachers' feedback through ongoing informal conversations, mostly via emails, and semi-structured interviews has been essential to ensure the accuracy and relevance of the online resources. In the scenario/case study, for example, the teachers identified a required change to ensure the content was relevant. Based on feedback that the students might find it easier, I added a one-page overview of the underpinning process with pop-up questions to make the core ideas of the resource more accessible.

How can Laura use information to develop her ePortfolio? Return to: Resources

Preview Edit Reports Grade essays

Laura's situation

Laura works with a group of four year olds. The children are exploring different colour combinations and textures when two of them start to argue about sharing the used equipment.

Laura tries to help the children sort out the situation but the children do not listen and continue to get upset.

She reflects on what happened and decides to use this situation for a reflection in her ePortfolio.

What information does Laura need for her reflection?

Screenshot 1: Laura scenario/case study to practice DIL

Consulting, identifying possible partners and ongoing collaboration with the teachers and supportive colleagues have all shaped the work since 2014. For instance, consultations with library and academic learning support staff have informed the in(ter)vention development. Library staff are assigned to individual programmes and in-detail discussions about their face-to-face session content helped to ensure value could be added to already existing work. Not only have I discussed the development with a number of interested parties over the last three years; information, for example, from the institutional Māori and the Pacific Learning Centres

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staff has helped to ensure the project's relevance. More recently in 2016, learning designers and Moodle analysts have positively impacted on the project through their valuable feedback on the planned resources. Their practical advice on ways to enhance the individual resources has included feedback on graphic design and text options or on Moodle capabilities not yet fully utilised such as lesson and quiz features that can enhance online learning.

Conclusion

This paper outlines the developmental process of creating an intervention to support DIL development through blended learning design with embedded resources. Additional, forthcoming feedback from teachers and students will inform amendments of the resources and the intervention. Ideas about how best to engage students in online discussions might be taken further by one of the teachers who has started her own research on engaging students on Moodle.

How affordances of online and face-to-face learning can be used appropriately with students in this course will be explored until the end of 2016. Therefore, detailed findings will be available at a later stage. The online resources have the potential to make learning more accessible and flexible for the students. Given that the resources are available at any time, can be accessed repeatedly and offer instant feedback on practice opportunities, some affordances of online learning have already been utilised in this study. Features of blended learning design to explore beyond my doctorate in the future include, for example, how to integrate face-to-face and online learning and teaching more seamlessly when embedding DIL.

Biography

Bettina Schwenger is a Senior Lecturer at Te Puna Ako, Centre for Learning and Teaching at Unitec Institute of Technology, New Zealand, and a Senior Fellow of the Higher Education Academy, UK.

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Designing Blended Learning to Foster Students' Digital Information Literacy: Developing an In(ter)vention

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