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Taking over someone else's e-learning design: challenges trigger change in e-learning beliefs and practices

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As universities invest in the development of e-learning resources, e-learning sustainability has come under consideration. This has largely focused on the challenges and facilitators of organisational and technological sustainability and scalability, and professional development. Little research has examined the experience of a teacher dealing with e-learning sustainability when taking over a course with an e-learning resource and associated assessment. This research focuses on a teacher who was inexperienced with e-learning technology, yet took over a blended unit of study with an e-learning resource that accounted for one-fifth of the subject assessment and was directed towards academic skills development relevant to the degree program. Taking a longitudinal approach, this research examines the challenges faced by the new teacher and the way she changed the e-learning resource and its implementation over two years. A focus of the research is the way the teacher's reflections on the challenges and changes provided an opportunity and stimulus for change in her e-learning beliefs and practices. This research has implications for the way universities support teachers taking over another teacher's e-learning resource, the need for explicit documentation of underpinning beliefs and structured handover, the benefit of teamwork in developing e-learning resources, and provision of on-going support.

Keywords: e-learning sustainability; e-learning beliefs and practices; reflection; longitudinal research

Introduction

e-Learning has become increasingly important in higher education as universities deal with funding cuts and seek alternatives to traditional face-to-face teaching with its staffing and cost implications (Johnson, Adams, and Cummins 2012). As universities progressively invest in the development of e-learning resources, they have begun to evaluate the costs and benefits in terms of sustainability (JISCInfonet 2004). e-Learning sustainability has been examined from a number of perspectives: Pozzi and Persico (2013) suggested a model to facilitate learning design that enables sharing, Gunn (2010) examined the challenges and facilitators of making small-scale e-learning initiatives sustainable, Salmon, Jones, and Armellini (2008) explored scalability of e-learning resources and Robertson (2008) discussed the influence of organisational structures, technology and pedagogy on e-learning sustainability. However, apart from

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Asensio, Whatley, and Jones (2001), little research has examined e-learning sustainability from the perspective of the individual teacher taking over someone else's course with an e-learning resource and associated assessment. At the same time, there have been calls for longitudinal research to examine change in teachers' e-learning beliefs and practices, and the effect on e-learning sustainability (Stepanyan, Littlejohn, and Margaryan 2010). This study draws on research into e-learning sustainability, as well as teacher beliefs and practices, to examine the challenges faced by a university teacher who took over another teacher's e-learning design. Conducted over two years, the research illustrates how, in addressing these challenges, the teacher changed her e-learning beliefs and practices.

Literature review

e-Learning design

In higher education, e-learning is increasingly being incorporated into face-to-face courses in the form of blended learning (Johnson, Adams, and Cummins 2012). Laurillard and Ljubojevic (2011) recommend that teachers beginning to teach using e-learning need to adjust their approach to learning and teaching, rather than simply transferring their approach from face-to-face teaching. Caudle and Moran (2012) highlight the importance of reflection when making this adjustment.

Goodyear (2005) has examined the significance of teachers' philosophy, pedagogical beliefs, and teaching tactics and strategies in educational design. He recommends that when learning designs are developed by a team, it is important for team members to agree on a common set of beliefs and practices from the beginning, as differences in beliefs and practices can be problematic. Variance in teachers' conceptions about how the web can be used by students to generate knowledge has been examined by González (2009). He identified a pedagogical hierarchy of three conceptions: use of the web for individual access to learning materials, information and individual assessment, use of the web for learning related communication, and use of the web for networked learning. Similarly, differences in the way teachers use blended learning have been identified by Lameras *et al*. (2012). They found teachers had different perspectives about the relationship between e-learning and face-to-face teaching in their units of study. Some teachers used the e-learning mode as a secondary environment for more teacher-centred teaching. Other teachers used e-learning as an equally important or primary environment for more student-centred teaching that emphasised the co-creation of knowledge and negotiated meaning.

e-Learning sustainability

e-Learning sustainability is defined by Stepanyan, Littlejohn, and Margaryan (2010) as 'e-learning practice that evidently addresses current educational needs and accommodates continuous adaptation to change without outrunning its resource base or receding in effectiveness' (p. 10). For the past decade, e-learning sustainability has predominantly been discussed from an institutional perspective. Early research focussed on the costs and benefits (JISCInfonet 2004), and scalability (Littlejohn 2003) of e-learning. Salmon, Jones, and Armellini (2008) presented an evidence-based model to improve scalability through a teamwork approach in which academic support staff, learning technologists and librarians work with university teachers to

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plan and develop courses using e-learning. In the field of Computer Supported Collaborative Learning, Pozzi and Persico (2013) have proposed the 4Ts model, designed to help teachers prepare and share learning designs, based on the elements of task, team(s), time and technology.

Robertson (2008) maintains that professional development addressing teachers' e-learning pedagogy is crucial for encouraging change in teaching practices and the sustainable adoption of e-learning. Focusing on university teachers' perspectives on the sustainability of 'grass roots' e-learning initiatives, Gunn (2010) argues successful e-learning initiatives need a learning design that has been proven to be beneficial, the potential to be adopted or adapted for use beyond the original context, and to be independent of the developers so 'future prospects would not be compromised' if they left (p. 90).

Although Gunn (2010) acknowledges the potential impact on e-learning sustainability when staff leave an institution, little research has examined this issue. An exception is research by Asensio, Whatley, and Jones (2001), which focused on a university teacher who took over a blended learning unit of study shortly before the semester started, after the previous teachers, who had developed the e-learning component, had left. Asensio, Whatley, and Jones highlight that e-learning designs are developed based on a teacher's beliefs; therefore, taking over another teacher's e-learning design means teaching with their beliefs, which may be dissonant with one's own and this may be problematic when the incoming teacher is not informed about those beliefs. It is this level of sustainability 'at the chalkface' that is the focus of this paper: what happens when teachers develop e-learning resources that are integrated into a unit of study that is then taken over by another teacher.

Change in beliefs and practices

Although Hativa (2000) claims teaching practices need to change to improve teaching quality, after working with two university teachers rated as poor teachers by their students, she found other qualities also need modification if teaching is to improve: personal characteristics that impact on teaching (such as speech quality, insecure behaviour and an associative way of thinking), pedagogical knowledge, beliefs about teaching (such as teaching by knowledge transmission) and beliefs about students (such as attributing the full responsibility for learning to students). In describing the process of change in philosophies of teaching, Guskey (1986) found teachers change their practices, see the impact on learning, then change their beliefs. In contrast, Song and Looi (2012) found teachers change their beliefs before they change their practices. Taking another perspective, Caudle and Moran (2012) found fluidity in change in teachers' beliefs and practices, with each one informing the other.

Looking at the impetus for change in teachers' philosophies of teaching, Entwistle and Walker (2000) showed teachers change beliefs following development of their knowledge, experience and feelings, although only if existing beliefs are found to be inadequate. Similarly, Scott (2013) found teachers change their beliefs when their expectations are not met and they have the opportunity for collaboration and discussion with colleagues. Thus, change in beliefs may be stimulated by teachers' unmet expectations or lesson images, described by Schoenfeld (1998) as teachers' expectation of student work within a lesson. Mälkki and Lindblom-Ylänne (2012) examined the influence of reflection on change in teaching practices. They identified challenges that may constrain teachers, preventing them from engaging in reflection or

changing their practice following reflection. These constraints may be organisational or curricula and include teaching with a curriculum that has been designed and prescribed by other teachers.

Although Stepanyan, Littlejohn, and Margaryan (2010) highlight the value of longitudinal research into e-learning sustainability, little longitudinal research has examined change in the e-learning beliefs and practices of university teachers taking over someone else's e-learning design. This study extends previous research by Asensio, Whatley, and Jones (2001), which focused on a technologically adept teacher who began teaching with an e-learning resource (taken here to mean online learning and teaching materials) developed by previous teachers. In that study, data was gathered over one semester through an interview with the teacher and access to her reflective diary. The focus of this study is a teacher who was inexperienced with e-learning and information technology, yet took over a blended unit of study with an e-learning resource developed by the previous teacher that accounted for one-fifth of the subject assessment and was directed towards academic skills development relevant to the degree program. What is distinctive about this study is the longitudinal approach. It examines the way the teacher changed the e-learning resource and its implementation over two years, and the way her reflections on the changes provided an opportunity and stimulus for change in e-learning beliefs and practices.

Methodology

Research design

This is one of six case studies from a multiple case study focusing on university teachers in health and associated disciplines. Yin (2009) recommends case study design when 'a 'how' or 'why' question is being asked about a contemporary set of events over which the investigator has little or no control' (p. 13). The qualitative approach taken enabled the researcher to focus on the people involved and incorporate her knowledge of the context and her insights and perceptions, with the goal of drawing upon and extending existing theory (Neumannn 2003). A longitudinal design was used in data collection to identify and comprehend development over time (Burns 2000). This research falls within the constructivist framework, using a subjectivist epistemology, where the researcher and participant co-create understanding using naturalistic methodologies (Denzin and Lincoln 2011). The research questions are: 1) What changes does the teacher make to the e-learning resource and the way it is used? 2) How does the teacher's reflections about the e-learning resource influence the changes she makes? 3) How do the teacher's experiences, reflections, practices and beliefs influence one another?

Data collection

The case study was conducted over two non-concurrent semesters at a research-intensive, campus-based Australian university (hereafter 'the University'). Using purposive sampling, a participant was selected who implemented an e-learning resource for the first time in 2007 and re-implemented it in 2008.

Semi-structured interviews of 40–50 minutes were held with the participant at the beginning and end of the semesters in which the e-learning resource was used. Each was recorded and transcribed and field notes were taken during the interviews. At the beginning and end of each implementation, the e-learning resource was analysed to

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identify what students were expected to do with it, the level of demand and assistance provided, and aims and learning objectives. Unit of study documents were analysed and a 20-minute semi-structured interview was held with the departmental information technology support officer. Thus, the participant's descriptions of her e-learning resource and student use were substantiated through other forms of data collection, facilitating trustworthiness and crystallisation of data (Tracy 2010).

Data analysis

A case study database was used to collect data and form a chain of evidence to identify conclusions and increase trustworthiness (Yin 2009). Preliminary data analysis during the data collection phase tested and extended existing theory. This focused on the categories and broader concepts identified in the research literature, which formed the basis of the research instruments (Bazeley 2009). As new categories and concepts were identified, the research instruments were revised. Final analysis occurred at the end of data collection.

Approval was granted by the University's Higher Research Ethics Committee. In this article, the names of the participant, her colleagues, department and institution have been changed. Excerpts from interviews include the interview number, i.e. interview 1 as (i1).

Results

This case study focuses on 'Jennifer', an experienced teacher who taught a graduate, professionally-oriented unit of study in a health discipline. She had been assigned to co-teach the unit of study with the existing teacher; however, the teacher left the University before the semester started. Jennifer said that before the study began, she had had little experience with e-learning beyond a simple website for a unit of study on the previous University learning management system (LMS), which she said she had used 'in a very limited form', principally as a repository for lecture *PowerPoint* slides.

The previous teacher had developed an e-learning resource to use through blended learning in the unit of study. The goal of the e-learning resource was to help students differentiate between peer-reviewed articles in academic journals and non-peer-reviewed articles in the media. The e-learning resource comprised 14 online practice activities involving essay question analysis, essay writing and searching a database of media articles. A total of 10% of the unit of study marks were awarded to the activities, with another 10% awarded to an essay based on skills developed through the e-learning resource. Students were to complete the activities outside class.

The previous teacher had worked with two colleagues to write the goals, learning design and content of the e-learning resource, which was developed by the University's e-learning support unit. It was one of four e-learning resources developed as a series in units of study in the course. Jennifer had been on sick leave the previous semester and had not participated in the development. This section describes the challenges Jennifer faced leading to changes she made to the e-learning resource over two years, elaborations of her e-learning beliefs and practices, and the way her experience, reflections, beliefs and practices influenced each other.

Challenges leading to elaboration of e-learning beliefs and practices

Three challenges for Jennifer concerned her inexperience with e-learning and information technology, the iterative process of e-learning development and the learning design of the e-learning resource. Over two years, Jennifer's reflections on these challenges led to elaborations of her e-learning beliefs and practices.

e-Learning inexperience

Jennifer compared her students' ability with e-learning technology with her own inexperience by saying in the first interview, 'The students are quite good at it [laughs], which is more than I am because this is the first time that I have done anything that is so online'. Despite this, she was initially enthusiastic about the e-learning resource and said in the first interview, 'I think it is quite an exciting thing to do'. After experiencing difficulties with activities in the first implementation, Jennifer wondered whether some of the problems were due to her inexperience, which prevented her from overcoming the inadequacies of the e-learning resource. She said, 'Because I wasn't a sophisticated user, the awkwardness really got in the way' (i2).

Following these difficulties, Jennifer became less enthusiastic about e-learning. Before the second implementation, she discussed her own and her students' preference for face-to-face teaching and her belief that e-learning should be left to universities that focus on online distance education:

> I quite like talking and I think students like tutorials. I think, you know, online learning: leave it with Queensland …. These people in places like Queensland are far more sophisticated in their use of online. So I'm sort of thinking, 'Well, this is silly'. (i3)

Notwithstanding, before the second implementation Jennifer said she needed to keep abreast of information technology 'to keep up with [the] level of sophistication' of her students. At the end of the second implementation, after reporting positive outcomes from changes she had made, she felt more confident about her technical skills with the e-learning resource, which she thought was reflected in the ease with which she had implemented it. She also thought the time taken up by the e-learning resource within the unit of study was proportional to the knowledge and skills students learnt from it:

> Perhaps it's because I'm more familiar with it and feel more confident so I don't get anxious …. But I felt it was just an assignment that I was doing. I think this year has gone better for me. And how that relates to – whether that's the course in general or whether it's just that change in that assignment. (i4)

Jennifer further demonstrated her increased confidence with e-learning technology by incorporating an online assessment submission tool in the e-learning resource during the semester. She also planned to include online communication tools in the following iteration for students to use while at different learning sites on their practical component. 'Bruno', the departmental information technology support officer, said he assisted Jennifer with implementing and marking the online discussions in the following semester, and that he had previously helped her with simpler tasks, such as uploading content files.

Although Jennifer's increased skills and confidence in using her e-learning resource was due to her increased experience, Bruno's assistance would have

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contributed. Bruno reported that he helped teachers in the faculty implement e-learning resources that had been developed by the University's e-learning support unit in order to 'mak[e] sure a project is sustainable'.

Iterative development

Because of Jennifer's inexperience and because she took over the e-learning resource shortly before the semester began, she did not have time to make major changes before the e-learning resource was implemented at the beginning of semester. While she made minor changes to the navigation and marking criteria of the activities before implementation, she foresaw more changes could be necessary following student evaluation at the end of semester.

Nevertheless, Jennifer made two changes after the semester began, one of which became problematic. She removed an activity that only involved reading, which Jennifer considered irrelevant and unnecessary; however, the change caused problems in the numbering of subsequent activities, some of which were assessable. This was not communicated to students, which confused them and led Jennifer to reflect on the best time to change an e-learning resource, saying, 'I really do think I will never again change ... an online piece of online work during the semester' (i2). Bruno reported there were also technical problems with the activities, which had to be redeveloped by the University's e-learning support unit.

Before the second implementation, Jennifer removed another nine activities from the e-learning resource. However, she predicted future redevelopment would involve putting back some of this content as several students had said, 'I need more guidelines'. (i3): they were working on the e-learning resource alone, off-site and needed clear instructions and marking criteria. Thus, Jennifer became more familiar with the nature of communication and guidelines needed in e-learning resources and acknowledged the iterative nature of e-learning development:

> I have kept the original one; it's still available; it's hidden. Because, you know ... what'll happen next year is I'll go back between something between the two. You know, I'll put in perhaps a few bits that I took out, or [my co-teacher] took out ... depending on how the students go and their feedback to me .... I just read it through today and I thought to myself, 'I think you've probably taken out too much'. (i3)

Additional plans for development involved changing the topic of the final essay and online activities.

Learning design

Some of the changes to the e-learning resource were related to learning design. These involved elaboration of Jennifer's broader educational beliefs and practices, which led to changes in the learning design of her e-learning resource, particularly the relevance of activities and assessment criteria.

At the beginning of the study, Jennifer questioned the need for the e-learning resource and the relevance of its activities, which she believed were too simplistic for her master's students:

> I wasn't sure why that was there because these students are master's students. They should be able to identify an essay question, what the instruction part is and what the topic is [laughs] (i1).

However, Jennifer made few changes to the e-learning resource before the first implementation. At the end of semester, she believed the e-learning resource had had no effect on student learning. She criticised the number of short activities of varying complexity, some of which promoted a surface approach to learning, and planned to redevelop the e-learning resource with tasks that promoted a deep approach:

> It just shows you the difference in the things they were asked to do. At one point it's a very superficial thing, at another point it's a bit more thoughtful and I think that can be a bit confusing for students …. We have got to work on that, on improving the quality of the questions we use and the way we assess it, to get a bit more depth to it. (i2)

Additionally, Jennifer was critical that although the e-learning resource promoted a surface approach to learning, it required a large amount of student work and marking. She said, 'When I looked at what the students were gaining from this, I could talk about it in 10 minutes in a lecture and it was partly because of the level of it' (i3). In particular, Jennifer was philosophically opposed to the high degree of scaffolding in the activities, which she believed promoted a surface approach. She believed this was unnecessary for master's students:

> It was done as scaffolding … and we had discussions in the faculty in the past and we will continue in the future, I think, to have them, about the level of scaffolding that the students need …. I'm not interested in making it a very low level, highly scaffolded course. I do appreciate some students won't have had this experience but my comment is, at this level, they may have to go out and sort out what they need to know themselves. (i3)

Before the second implementation, Jennifer redeveloped the e-learning resource based on her own experience of it and student feedback through the University evaluation form, which she said showed 'some [students] really liked it and some of them absolutely hated it' (i3). She reduced the fourteen variable activities to four key tasks that directly prepared students for their assessable essay. Observation of the e-learning resource confirmed that the activities in both implementations were markedly different and that the tasks in the second implementation were more relevant to the unit outcomes listed in the unit of study outline.

Following the second implementation, Jennifer reported that the students gave positive feedback on the e-learning resource and 'have been much better about it this year'. She concluded that the activities were relevant:

> We moved most of their heads around … but I think it was a small move. I think most of them were [good at] that … The ones I suspect who aren't as good at, or hadn't thought as much about it, would be very quiet, so that makes it a very important thing to do. (i4)

Nonetheless, Jennifer wondered whether harder assessment tasks and more specific criteria would distribute student marks more broadly and promote student work at a higher cognitive level because, she said, 'they're obviously not quite getting the [high distinction] idea' (i4). Thus, over the two year study, Jennifer elaborated her beliefs and practices about the learning design that would promote a deep approach to learning and the type of guidelines and criteria needed to support this.

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Influence of experiences, reflections, beliefs and practices

Due to the limited handover in taking over the previous teacher's e-learning design, Jennifer experienced many difficulties in the first implementation of the e-learning resource. This formed the basis of her reflections on her experiences and changes in her beliefs and practices.

Understanding beliefs underpinning learning design

Before the unit of study began, Jennifer said she and the previous teacher 'really didn't have long discussions about what we were going to do in this [unit of study]'. Thus, the meeting with the previous teacher was brief and unstructured, and ineffective as a handover.

With no background information about the learning design underpinning the development of the e-learning resource, Jennifer was unconvinced it would be effective and said, 'I wasn't sure that that was ... useful' (i1). Nevertheless, she said her uncertainty may have resulted from not being involved in the development of the e-learning resource and that the teachers who had developed it may have done so based on their e-learning beliefs and teaching goals. She reflected, 'They might have had something in their mind they forgot to tell you' (i1).

Lack of ownership

Jennifer encountered problems during the first implementation and was critical of the e-learning resource, despite making minor changes. She said she had not changed it substantially before the first implementation because the teachers who had developed it had designed it to fit within the unit of study and she thought it inappropriate to change the results of their work:

> I was really cranky at the people who set it up. I mean, I could have changed it but because they had done a lot of work developing the unit and teaching plan ... I didn't want to change it too much. (i2)

Thus, even though Jennifer disagreed with the teaching goal of the e-learning resource, she appeared to have been initially daunted by it, its significance in the unit of study and the amount of work that had gone into its development. She also reported feeling restricted in the changes she could make to the purpose and content of the e-learning resource because if formed part of a series of e-learning resources integrated into four units of study throughout the course. When considering changes following the first implementation, she said, 'I don't know what the other people want to do and I have to fall in with them'.

Jennifer reported a lack of ownership of the e-learning resource and said at the end of first implementation, 'The [e-learning resource] I sometimes feel was foisted on me'. She reflected that if she had been involved in its development or had received an adequate handover, she may not have had difficulties implementing it. She acknowledged that her problems had been exacerbated by her inexperience with e-learning and information technology:

> Maybe if I had spent a bit more time with it at the beginning, I might have recognised these problems coming up. But this was the first time I had done anything like this, so there was no real introduction for me. (i2)

Jennifer therefore experienced difficulties taking over an e-learning resource developed by another teacher, who had her own e-learning beliefs and practices, and provided little explanation about the learning design that formed the basis of the development.

Discussion

This case study illustrates the issues that may arise when a university teacher takes over another teacher's e-learning resource. The challenges were particularly difficult for Jennifer because the teacher who had designed the e-learning resource left the institution before implementation. Although Jennifer was aware of the teaching goal of the e-learning resource, she did not understand its relevance in the unit of study.

Changes following reflections on challenges

Jennifer reflected that her inexperience with e-learning and lack of confidence using e-learning technology challenged her adoption of the e-learning resource. Consequently, she was reluctant to make major changes before the first implementation. Jennifer's hesitancy is in line with research by Mahdizadeh, Biemans, and Mulder (2008), which found teachers' attitudes to computers and the web influence the way they use them in their teaching. Similarly, in studies of pre-service teachers using social networking software in teaching, Turvey (2012) found those who use information technology extensively outside their studies are more confident using it in their teaching.

Although Jennifer's e-learning resource had been developed based on another teacher's teaching goals and e-learning beliefs and practices, these were only communicated to her in the way they were embodied in the resource. At the beginning of the study, Jennifer was inexperienced with e-learning, so her own e-learning beliefs and practices were mostly based on her experience with face-to-face teaching. Therefore, in line with research by Caudle and Moran (2012), she based her revision of the e-learning resource before the first implementation on her face-to-face experience. This became problematic when, part-way through the first implementation, she realised she needed to make changes to the e-learning resource and these changes were not communicated to students and affected assessment items, causing confusion.

Following the first implementation and student evaluation, Jennifer redeveloped the learning design of the e-learning resource and her teaching goals. She elaborated her e-learning beliefs and practices, particularly those concerning the relevance of activities. However, following significant changes before the second implementation, Jennifer found she had not provided sufficient guidelines to students. She realised students need clear communication and guidelines while working on e-learning resources alone and off-site. At the end of the second implementation, Jennifer also noted that she needed to provide specific criteria to students to promote work at a higher cognitive level. Thus, the iterative nature of e-learning development, identified by Phillips, Kennedy, and McNaught (2012), posed additional challenges.

The finding that Jennifer changed her e-learning beliefs before her e-learning practices confirms research by Song and Looi (2012), who found change in beliefs is required before change in practices. In this study, Jennifer changed her beliefs, then changed her practices, observed the results, then confirmed her beliefs. This also supports research by Entwistle and Walker (2000), who found teachers' beliefs can change through development of knowledge, experience and feelings if existing beliefs are found to be inadequate.

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The changes in Jennifer's beliefs were influenced by 'critical unmet expectations', a term introduced by Mälkki and Lindblom-Ylänne (2012). Jennifer's students' use of the e-learning resource did not match her expectations, or lesson image (Schoenfeld 1998), of important learning outcomes. Scott (2013) found teachers are more likely to change their beliefs following critical unmet expectations if they have the opportunity for discussion and collaboration with colleagues. Yet, while Jennifer could discuss and collaborate with her current co-teacher, she could not do so with the teacher who had developed the e-learning resource, who could also be considered a co-teacher.

After the second implementation, Jennifer discussed her plans to introduce online discussions for her students to communicate while undertaking their practical component. This indicates a change in e-learning beliefs and practices from providing structured information and students individually studying materials provided by the lecturer, towards those in which 'the Web is used for learning related communication', identified by González (2009).

Taking over someone else's e-learning design

Jennifer did not understand the relevance of some components of the e-learning resource because she did not have discussions with the previous teacher about her e-learning beliefs and practices, which underpinned the learning design of the e-learning resource. Before the first implementation, Jennifer said the previous teacher 'may have had something in her mind she forgot to tell' her. Stein, Shephard, and Harris (2011) have highlighted that a teacher's e-learning beliefs inform their e-learning practices. Thus, by taking over another teacher's e-learning resource, a teacher is taking over their e-learning beliefs and practices.

One other study, by Asensio, Whatley, and Jones (2001), reported a similar finding when a university teacher took over a unit of study with an e-learning resource, with no opportunity for discussion with the previous teachers. Like Jennifer, the teacher had little time to review the e-learning resource before implementation. Asensio, Whatley, and Jones highlight the difficulties when taking over another teacher's e-learning resource because 'Taking over someone else's design implies taking over someone else's representation of knowledge ... and their personal understanding of the students' intended learning experience' (p. 73).

Because of the lack of handover and time for review, Asensio, Whatley, and Jones (2001) found the new teacher had to take the content and pedagogical design of the e-learning resource 'at face value' and hoped to make changes once the semester started (p. 69). However, during the semester, the teacher only had time to try to understand the design of the e-learning resource and how assignments were marked, and deal with pressing technical and managerial issues. Similarly, Jennifer had little time to change the e-learning resource substantially during the first implementation.

The difficulties involved in taking over someone else's e-learning design have been substantiated in studies by Rambo (2012) and Archambault and Crippen (2009), who examined school teachers using pre-packaged courseware incorporating e-learning resources. The teachers in the studies reported difficulties when there were errors in the course materials they were unable to correct. In contrast, Archembault and Crippen noted that the teachers reported a positive experience when they could create their own content.

When investigating scalability of e-learning resources, Littlejohn (2003) found an e-learning resource is more likely to be used by the teacher who developed it, rather than other teachers. This has implications for the success of the current Open Educational Resources (OERs) movement. Similarly, Gunn (2010) contends that university teachers have difficulty using other teachers' e-learning resources because of a 'not invented here' syndrome. Taking a different perspective, Goodyear (2005) highlights the challenges that may occur when teachers working together have different beliefs and practices. He claims that when teachers who work in teams developing e-learning resources have different beliefs, it 'can lead to fatal divergence' because beliefs directly influence practices (p. 86). Viewed from Goodyear's perspective, Jennifer and the previous teacher were co-teachers with divergent e-learning beliefs and practices.

Because Jennifer's e-learning beliefs differed from the previous teacher's, she felt constrained by the framework of the e-learning resource and was critical of it, substantiating research by Mälkki and Lindblom-Ylänne (2012) that teachers lose motivation when there are elements in their teaching context they cannot change. After redeveloping the e-learning resource, Jennifer was more positive about it because, according to Mälkki and Lindblom-Ylänne, she had been 'able to apply [her] own understanding and values, as well as see the results of [her] own actions' (p. 42). Nevertheless, Jennifer was still constrained by the goals of the e-learning resource because it formed part of a series throughout the course.

Asensio, Whatley, and Jones (2001) highlight that it is more difficult to take over an online course than a face-to-face course because an online course is usually 'set in stone', available to students from the start of semester (p. 69). Because of this, e-learning resources must be finalised before the semester begins, which can be challenging for teachers taking over a unit of study with an e-learning resource just before the semester starts. Mahdizadeh, Biemans, and Mulder (2008) emphasise the time needed for e-learning, in which teachers need to learn how to use the technology, then prepare to use it in their teaching.

Implications

In discussing the poor uptake of e-learning by university teachers, Littlejohn (2003) argues that university teachers need support for the complex nature of designing and developing e-learning resources. She recommends this should include technical systems, as well as organisational arrangements and people to provide design and technical support. This study highlights that similar support and time is needed for teachers taking over another teacher's e-learning resource so they can redevelop it according to their e-learning beliefs and practices. Time and support is also required when e-learning resources created by others are implemented.

Gunn (2010) recommends a team-teaching approach to e-learning design to ensure continuity following staff changes. Jennifer's e-learning resource had been developed by the previous teacher working with a team on a series throughout the course. While they provided an overview of the series, it would have helped Jennifer if a teacher other than the one who left had been involved in developing the e-learning resource. This teacher could have informed Jennifer about the underlying beliefs. The team-based approach to e-learning development recommended by Salmon, Jones, and Armellini (2008) also emphasises the importance of staff discussion and documentation of underpinning beliefs and goals. Similarly, the 4T Model developed by Pozzi and

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Persico (2013) to assist in the design of Computer Supported Collaborative Learning by focussing on task, teams, time and technology facilitates the sharing of designs. Finally, Adams (2004) recommends teachers record their beliefs when designing e-learning resources to assist other teachers using them. This highlights the need for a well-structured handover of e-learning resources, including documentation, which could include notes about the underlying philosophy of teaching and learning, the rationale for the development of the e-learning resource and the learning objectives. It would be useful if teachers could easily add to the documentation each time they use the resource.

Limitations

It would have been useful to capture Jennifer's change in beliefs over the two years of data collection through a self-report log, which would have picked up other influences on her beliefs and practices between implementations of the e-learning resource in non-concurrent semesters. However, self-report logs are time-consuming for participants and, given the two year timeframe, it proved difficult to recruit when this method of data collection was proposed to prospective participants. This is an example of the compromises needed to conduct meaningful research in naturalistic settings, which may have been more difficult given the context of a research-intensive university.

Although the research reported here provides insight into the challenges in taking over another teacher's e-learning design, it is based on one case study. Additional research could aim to generalise these findings across a larger number of university teachers, disciplines, teaching modes and institutions.

Conclusion

The difficulty in taking over another teacher's e-learning design stems from the fact that teachers develop their resources based on their e-learning beliefs and practices. Taking over another teacher's e-learning resource therefore involves teaching using another teacher's beliefs. This is more challenging in the e-learning context due to two factors. Firstly, before teaching with someone else's e-learning resource, teachers need time to understand, redesign and redevelop it, and gain the necessary skills, experience and confidence. Secondly, e-learning resources are usually available to students at the beginning of semester and need to be prepared ahead of time, which may be problematic when teachers take over a course shortly before the semester starts. Staff developing e-learning resources would do well to work in teams and document the e-learning beliefs underpinning their learning design to facilitate handover of e-learning resources in the event of staff changes, or to facilitate wider adoption. Finally, on-going support should be provided to teachers taking over another teacher's e-learning resource to help them understand the underpinning beliefs and possible ways they can redevelop it to align with their e-learning beliefs and practices. Not only do teachers need time to redesign and redevelop e-learning resources, they also need time to experiment and properly evaluate the resources before any redesign.

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