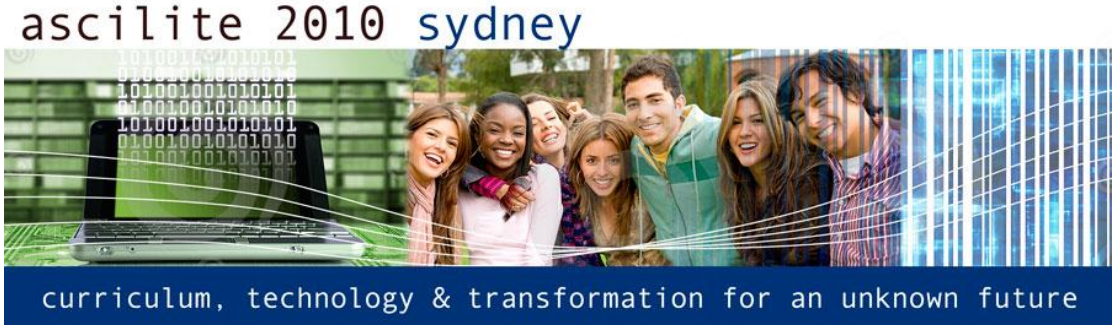

Making sense of learning design: Co-teaching within a blended educational environment.

Nicola Westberry
Faculty of Health & Environmental Science
Auckland University of Technology

Large classes seem to be a permanent fixture in tertiary education, often necessitating the use of multiple teachers to design and enact learning activities with many students. Within these multi-teacher learning environments, there is a need to gain a deeper understanding of the ways teachers make learning designs meaningful through their pedagogical beliefs. Employing the terms "design-for-use" and "design-in-use" (Folcher, 2003, p. 647) to draw a distinction between planned and enacted design, this paper reports on a qualitative study that followed the experiences of three teachers in a blended tertiary-level business writing course. The findings suggest that the teachers related to the same learning design in differing and conflicting ways, revealing the relative nature of "pedagogical sense-making" (Goodyear, Markauskaite, & Kali, 2010, p. 16), and paving the way for a more extensive discussion of co-teaching within ICT-supported learning environments.

Keywords: teacher beliefs, learning design, co-teaching, blended learning

Introduction

In response to economic factors and increasing numbers of students, large classes seem to be a permanent fixture in tertiary education. Student cohorts, sometimes numbering in the hundreds or even thousands, necessitate the use of multiple teachers to distribute the teaching workload. Heeding the call to explore the "complex and less visible space of teacher beliefs" (Steel & Levy, 2009, p. 1013), this paper proposes to examine how different teachers relate to the same learning design within an undergraduate business writing course. As a precursor to a more substantial discussion, this concise paper intends to explore how "pedagogical sense-making" (Goodyear et al., 2010, p. 16) occurs in relation to learning designs when cognition is distributed across multiple teachers within learning environments supported by information and communication technology (ICT). In addition, by examining the perspectives of teachers who lack an interest in ICT, the paper offers a response to Steel (2009) who has identified a need to consider perspectives from teachers who may struggle (for various reasons) with the use of technology.

Theoretical framework

Teacher cognition

A substantial body of literature has examined the thinking, beliefs, and decision-making processes of university teachers (see for example, Hativa & Goodyear, 2002; Kane, Sandretto, & Heath, 2002). A subset of this literature has investigated teacher beliefs and practices within ICT-supported learning environments (Bain & McNaught, 2006; Mahdizadeh, Biemans, & Mulder, 2008; Steel, 2009; Steel & Levy, 2009). For example, scholars have considered the relationship between teachers' beliefs and

learning designs within a learning management system (Steel, 2009), teachers' perceptions of affordances and constraints of web technologies (Steel & Levy, 2009), and the "mental resources" (forms of knowledge formed through experiences) that shape teachers' design decisions (Markauskaite & Goodyear, 2009, p. 615).

While our understanding of teacher cognition within ICT-supported learning environments has deepened, there remains a continued need to study the relationship between what teachers *say* (for example, teacher beliefs, knowledge, and design planning) and what they actually *do* in the classroom. Inconsistencies between teacher beliefs and practice have been observed (Hativa & Goodyear, 2002; Kane et al., 2002); therefore, both "espoused theories of action" and "theories in use" (Argyris & Schön, 1974, pp. 6-7) must be considered. More specifically, there is a need to gain a deeper understanding of how teachers make sense of learning designs within co-teaching contexts. The study of co-teaching, defined as "two or more people sharing responsibility for teaching some or all of the students assigned to a classroom" (Villa, Thousand, & Nevin, 2008, p. 5), within online learning environments has been largely overlooked. It is pertinent to understand the ways in which different teachers relate to the same learning design and whether they construct meaning in similar or differing ways.

From artefact to instrument: Mobilisation of the shared learning design

This discussion is underpinned by the concept of artefact-mediated activity; namely, that human cognition originates from social processes and is mediated by cultural artefacts. These theoretical principles have been articulated extensively elsewhere (see for example, Engeström, 2001; Vygotsky, 1978). Artefacts exist in the world, "but they need to be mobilized by users in their activities in order to become instruments, i.e. means in the service of goal-oriented activity" (Folcher, 2003, p. 648). By investigating the use of a knowledge-sharing database in a call centre, Folcher (2003, p. 647) considered the intersection of "design-for-use" (the design assumptions within a knowledge-sharing database) with "design-in-use" (the actual use of the database artefact by operators). The findings suggested that the appropriation of an artefact (a thing) as an instrument (a means to an end) reconfigures activity in complex ways as the assumptions within the design meet real-life use. Applying these concepts to educational settings, it is contended that a learning design can be conceptualised in two ways: as a design-for-use (a plan of action that embodies pedagogical design assumptions) and as a design-in-use (the actual enactment of the plan). The following discussion examines what happens when design-for-use meets design-in-use in relation to one learning activity that was experienced by three teachers within the same paper. Through the eyes of three teachers, it considers how the shared learning design was mobilised by the teachers as they appropriated it into their activity.

The study

The findings reported in this paper represent a subset of the findings from a larger doctoral study (Westberry, 2009) that examined the experiences of five teachers and fourteen EAL (English as an Additional Language) students across three case studies as they participated in learning activities mediated by online technologies. This qualitative study collected data on an ongoing basis over a semester using interviews and observations, and data was interpreted using a socio-cultural perspective. As a work-in-progress, this paper will provide an analysis of the experiences of three teachers as they engaged in an iterative learning activity within one of the case studies (an undergraduate business writing course lasting five months). The primary objective of this course was to develop student understanding of both academic and business writing. As a blended learning environment, it combined face-to-face components (weekly lectures and workshops) with an online peer review activity supported by an asynchronous tool embedded within a learning management system (LMS). In relation to the peer-review activity, each week the students were required to create a draft text (for example, one paragraph of an essay) and post it into a webpage that they shared with approximately 20 students. Within 48 hours, they were expected to select another student's text and post critical feedback, prompted by criteria on the website and models supplied in lecture. Tutors did not provide feedback on the texts, but instead gave three general grades (poor, adequate, and well done) to assess the quality of the feedback. This weekly cycle in which students gave feedback and received feedback about their writing from student peers culminated in the production of three texts during the paper (an essay, a critical review, and a report).

Table 1: Description of teacher participants

Teachers	Role in paper	Teaching experience	Computer experience	Level of Education
Lecturer	Convenor with overall responsibility for paper content and designer of learning activities. Conducted lectures, little direct student contact.	English language teaching and tutoring in business communication. Lecturer for 5 years in this paper.	Little personal use of Internet (email only). Used online learning activity for 5 years.	PhD
Tutor 1 (Sessional Assistant)	Responsible for weekly workshops and marking of student assessments.	English language teaching and extensive proofreading work, 2nd year in this paper.	Email and word processing. Avoids the Internet due to cost.	Post-Graduate Diploma
Tutor 2 (Sessional Assistant)	Responsible for weekly workshops and marking of student assessments.	Extensive experience in secondary and tertiary education. 2nd year in paper.	Limited experience with online technology.	PhD

Findings and discussion

As designer of the peer review task, the lecturer believed the learning activity was a means to support constructive and co-constructive learning processes. In her view, the online space was a site where students could deepen their understanding of writing as they gave feedback to and received feedback from other students. Guided by the belief that students could act as resources for themselves and each other in the development of understanding about writing (a key design assumption), the lecturer designed the online peer review activity as a student-only space where social interaction occurred amongst the students and the voice of the teacher was essentially absent. For the lecturer, the design-for-use (the plan of action) was a credible tool or instrument to realise learning outcomes. In contrast, as the tutors enacted the design with the students (design-in-use), they expressed concerns that many students were not capable of offering guidance and advice about writing to their peers. From their perspective, social interaction between the students was an ineffective means to realise the stated learning objectives. In place of the student voice, the tutors believed that targeted individual feedback from the tutor should be given and Tutor Two questioned independent learning in this context:

> I don't think they get enough help … the focus on them learning independently is not practical when you're trying to undo the previous 10, 12 years of experience writing. They aren't capable of that in that stage of their writing process, they're just not …. I don't think they're quite ready for it [students working together without the teacher] … I think they still need someone to hold their hands and tell them where to put an apostrophe. (Tutor 2/Interview 1)

As the paper progressed and the tutors continued to engage with the peer review activity (the learning design-in-use), these beliefs were reinforced. They observed some students struggling to offer feedback to their peers and Tutor One noted:

> They're struggling to do what they're supposed to do, but they don't understand it. I mean, some of the feedback you see, you think, oh my … why do you think that? What little fantasy have you got to overcome, and so if they're giving feedback which is wrong to people who have got no idea what they're doing anyway, their usefulness is limited. (Tutor 1/Account 2)

Believing that social interaction between students was problematic, the tutors perceived that the design-for-use of the peer review activity was flawed. In response, they appeared to relate to the learning design in differing ways. Tutor Two resisted the lecturer's design of the peer feedback task by posting her own written feedback on student writing. She brought her voice to bear in the virtual space which had been designated a student-only space by the lecturer. Additionally, Tutor Two devoted extra time for face-to-face interaction with individual students to ensure they received tailored assistance. In

essence, she reconfigured the learning design in which her voice (as tutor) was heard both online and face-to-face; however, by doing so, she experienced a significant increase in her workload and this led to feelings of resentment. In contrast, while Tutor One also resisted the lecturer's design, her resistance was manifested in more subtle and indirect ways. She distanced herself from the learning activity by rarely discussing the peer feedback task or the LMS in the weekly face-to-face workshops. In addition, she emphasised the importance of teacher feedback – circulating around the class offering comments on student work and encouraging the students to meet with her face-to-face. Unlike Tutor Two, she did not interject her voice into the peer review activity, but bounded her practice by saying that her role was "not part of the planning, I just do the teaching that's provided" (Tutor 1/Interview 1).

In this blended learning environment, cognition was distributed between a number of teachers: the lecturer designed the peer review activity and the tutors mobilised the design in practice. As designer of the activity, the lecturer identified learning objectives and constructed a learning task capable (in her view) of realising these goals. Influenced by the assumption that student-to-student interaction could support learning processes around writing, the lecturer believed that the design-for-use was an instrument or a means to achieve learning outcomes. Informed by beliefs that students required individual assistance from the teacher (rather than fellow students), the tutors did not view the learning design as a viable instrument to realise learning outcomes and, as they mobilised the design, their expectations were confirmed. This situation eroded the value of the task for the tutors, increased tensions in the relationship between the tutors and the lecturer, and led to inconsistencies in practice.

The findings suggest that the teachers related to the learning design in differing and conflicting ways, revealing the relative nature of "pedagogical sense-making" (Goodyear et al., 2010, p. 16) within a co-teaching learning environment. As each teacher made sense of the learning design through her pedagogical beliefs, the appropriation of the design artefact as an instrument experienced relative failure. Specifically, the design assumption that students could act as resources for each other in this online setting impeded this process. The learning design was not perceived as a viable means to realise learning outcomes. As the design was enacted (design-in-use), it was resisted and reconfigured by the tutors as they positioned themselves in relation to the learning activity. The findings reveal inconsistencies between design and practice within co-teaching settings, and the distance that can exist between plans and real-life use. They also highlight the need to consider not only the properties of a design, but also the ways in which individuals *perceive* the design as a means to an end (Folcher, 2003).

Conclusion

The discussion has provided a behind-the-scenes depiction of teaching practice through the eyes of three teachers engaged with the same learning activity in a blended learning environment. By examining the alternate ways teachers made a learning design meaningful through their pedagogical beliefs, this paper draws attention to the relative and constructive nature of teaching practice, mediated by beliefs and experiences. Inconsistencies between teacher beliefs and practice have been considered, revealing how teaching activity is reconfigured as the assumptions embedded within the learning design meet real-life use. The complexity of co-teaching within blended learning environments has been illustrated, particularly in relation to the role of perception in the sense-making process when cognition is distributed between multiple teachers. The duality of learning design – as both design-for-use (plan) and design-in-use (practice) (Folcher, 2003, p. 647) – within co-teaching settings is an intriguing topic worthy of further exploration.

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Author: Nicola Westberry is a lecturer within a large undergraduate paper in the Department of Interdisciplinary Studies at Auckland University of Technology. Email: nicola.westberry@aut.ac.nz

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