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ARTICLE

Collaborative self-study of online teaching in early childhood teacher education

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Six academics at a regional university in Australia engaged in collaborative research examining their teaching and learning practices, their current understandings and beliefs about teacher education pedagogy and, specifically, the online teaching and learning environments. This collegial self-study project was guided by the goal of achieving professional learning through participation and active reflection on pedagogical practices, as well as exploring linkages and continuities between the courses within two nested degree programs in which the researchers teach. The article focuses on how the faculty implemented the self-study research project and shows how the negotiated transition supported each researcher to engage deeply with socioconstructionist theories within the pedagogy of an online environment.

Introduction

During the 1990s, higher education institutions across the globe began to place learning materials online in the expectation that this shift would allow them to extend their reach and create new revenue streams (Schroeder, Minocha & Schneider, 2010). However, the change to an online delivery mode did not prove as easy for the higher education sector as had been expected:

> The common lesson learned by higher education institutions around the world is that using the online environment for teaching requires not just a digitization of the face-to-face delivery mode, but a whole new learning approach. (Schroeder, Minocha & Schneider, 2010, p. 549)

As Allen and Long (2009, p. 1) indicate, 'if knowledge work changes its character', then our approaches to learning in higher education must change. Online learning moves higher education beyond a focus on content provision into a dynamic communal process of sense-making and knowledge creation in which answers lead on to further questions. This article examines such a learning journey utilizing the significant self-reflection of nine academics in a higher education setting in Australia. A team of Early Childhood Education and Care (ECEC) educators tasked themselves with reconsidering their teaching strategies from a paper-based transmission mode to a socioconstructionist online presence. Their undergraduate students are studying in distance education mode and prior to this research received course

materials through the postal system via correspondence. As with other universities, courses at this university are being offered in an online mode (Roughton, Martin, Warren & Gritmon, 2011). The ECEC team decided to investigate their own professional development processes in moving to an online pedagogy.

The first section of this article presents the problem we identified as we began to work on our teaching and learning context and methods. Following is a discussion of the self-study framework used to inform our professional development process. Then, based on the research team's co-constructed set of philosophy statements, we outline the technical, conceptual, and pedagogical aspects of our journey. The article concludes with a discussion of our study within higher education. The lecturers and educational designer involved in the study are all authors of this article, thus recognizing the collaborative nature of the work involved when redesigning online teacher education pedagogy.

Statement of the problem

As a teaching team within an Australian university with a history of using paper-based teaching materials, our practices were primarily defined by enhancing the efficiency of 'knowledge acquisition' (see Hong & Sullivan, 2009). We focused on the need for our students to acquire pre-defined knowledge. Learning communities were not emphasized. Our teaching and learning paradigm was focused on transmission and reproduction strategies. A literature review conducted by members of the ECEC team (Green, Wolodko, Foskey & Brooks, in press) identified that, in higher education, much online learning was still used to replicate traditional face-to-face and print-based approaches to learning rather than implementing knowledge-creation practices. This review confirmed that other educators in higher education institutions might also be experiencing difficulties developing appropriate online pedagogies.

As will be discussed later in this article, the opportunity to implement a new learning management system provided the impetus to explore in great depth our own conceptions of socioconstructionist philosophies. As we moved from paper-based materials to increasingly complex technological strategies, each team member struggled with the practicalities of the technologies and aligning these with our socioconstructionist beliefs. We were challenged by how to best scaffold students in the online learning environment (see Wolodko, Stewart, Green, Edwards, Brooks & Littledyke, 2011, for further details). We became increasingly uncomfortable with the gap between our teaching and the socioconstructionist pedagogies we were encouraging our students to adopt. We wanted to change the way we taught so that our students could experience what it was like to be part of a community of learners. We wanted our students to take an active part in constructing their own knowledge. We wanted to develop more appropriate online pedagogies. Through our own collaborative discussions, we began trialing strategies to emphasise a full range of higher-order learning outcomes.

Self-study framework

Our study's aim, first and foremost, was our own capacity building rather than strictly changing the structure and strategies of the learning materials. Without a new mindset (conceptual change), it was difficult for us to conceive of and ultimately relate to the students in the online environment. The focus was not on the external action, but our own personal and professional inquiries: such a personal change perspective is characteristic of a self-study approach to research (Loughran, Hamilton, LaBoskey, & Russell, 2004). Self-study generated questions about the very nature of teaching about teaching in academia (Korthagen & Vasalos, 2005). For the research team, self-study methodology had an important role in conceptualizing our scholarship in teaching and learning as it guided us to generate and make

public our evolving knowledges about teaching and learning so they might be informative to the education community in general.

Self-study is distinguished from action research, teacher-as-researcher, teacher research, and participatory research by its emphasis on change and/or understanding of one's own teaching (Samaras & Freese, 2009). LaBoskey (2004) identifies five characteristics of self-study methodology: (1) The project is self-initiated and focused: we were both researchers and the researched. While our practices changed, it would not have been possible without personal professional change. While the team numbered nine academics, six chose to become involved in the self-study research project. (2) The research aim was improvement of online teaching and learning. We focused on our own improvement in what we do and how we do it. (3) Self-study is interactive: we wanted to work together and share our thoughts. Our inquiry developed into the sharing of personal insights within our team as we discussed our plans for online design and development. We shared our literature findings and discussed these in depth. At various points in the inquiry, we began to create our own collaborative writings. (4) Multiple research methodologies were used. These were mainly qualitative in form, such as recording interviews of each other within the meeting structure, metaphor construction and analysis. Other strategies included completion of personal philosophies survey, self-analysis of the learning design of the units we taught, and a technology confidence survey. In addition, we surveyed our students seeking their input about both our successes and where we might improve our practice. (5) The validity of our self-study research was defined by the trustworthiness we developed in our collaborations, and the developing respect for each person's shared perspectives. We became confident in sharing our private struggles, reflecting both on context and practices.

A critical way to differentiate between the genres of self-study and action research is to focus on the relationship between 'action' and 'research', and 'self' and 'study'. When the focus is on action, we would be trying to modify or transform our practice or situation, or that of the community or institution. When the focus is on the self, then primary attention is directed to the development of personal action including conceptual change. As self-study researchers, we used our experiences as a resource for the research and problematized ourselves in our teacher education practices with the goal of reframing our beliefs and practices. Our research differed from action research in that we were more focused on who we were as teacher educators, rather than what we as teacher educators did (Samaras & Freese, 2009).

Our teaching and learning context

12,500 of the university's 17,000 students study via the Internet (DEhub, 2011). The ECEC team offered two one-year degree programs: the Bachelor of Teaching (ECE), and the Bachelor of Education (Early Childhood [EC]). The Bachelor of Teaching (ECE) builds on prior study and ECEC work experience to enable students to graduate with a three-year degree. It forms a pathway into the Bachelor of Education (EC), which is designed to be responsive to the diverse employment opportunities of early childhood teachers and related services. This degree provides the necessary qualifications to work as a teacher with the birth to five-year age group and to take advantage of the current government agenda to ensure that all children in the year before formal schooling will have access to high quality early childhood education programs delivered by degree-qualified early childhood teachers.

Both degree programs build on students' previous study and work experience with a direct pathway from Technical and Further Education (TAFE) studies at Diploma level. Both degree programs are offered via distance mode (off campus) only. The majority of the students in both programs were working full-time in the early childhood sector, while being enrolled part-time in the degree program. Each of the 16 courses within the early childhood degree programs was of one-semester duration (150 hours) and focused on early childhood curriculum and pedagogy (birth to eight). Course content included

opportunities to study philosophy, leadership, exceptional development, play, multi-literacies, mathematics, relationships with families and communities, creative arts and science as they related to young children, as well as learning and teaching.

Importantly the reconceptualization work undertaken by the researchers supported the move away from paper-based materials to teaching and learning online. Up until this time, the university used WebCT/Blackboard CE6 as a primary learning management system (LMS). In January 2009, the research group began to explore Sakai as an alternative. We hoped this move would support a socioconstructionist approach to online pedagogy, although we had little collective experience of the technology. Prior to this initiative, there had been some migration from paper-based course materials to online teaching and learning. The units taught in this way were provided on CDs supplemented by asynchronous discussion groups. However, this format did not facilitate dialogic interactions between students and lecturers. For example, the Blog tool was individual and did not allow other participants to leave comments. No Wiki tool (or equivalent) was available to students where they might share and build on each others' evolving insights. Following discussions about rethinking our socioconstructionist perspectives, the learning design and technology specialist in the team suggested trialing the Sakai system that was being piloted in the university. The courses used as examples in this article were designed for Version 2.4 of the Sakai Learning Management System.

Self-study data collection

Participation in the development of the online teaching materials for the ECE and EC programs was, and continues to be, a declared requirement of the ECEC team's workload, though collection of data for the research was entirely voluntary. Academic staff met weekly with the educational developer as an entire team in the first semester of 2009. A smaller research group was formed mid-year and continued to share emerging knowledges critically examining their practices. Data-gathering activities involved the development and sharing of metaphors through photography and drawing, reflective journals, audio-recorded conversations, artefacts, student and staff surveys, and evaluating the online development of units. All data sources were analysed in a narrative form, systematically examined for common themes and connections between themes.

Collaboration within the research team included an analysis of relevant research literature within our weekly meetings, the critique of online pedagogies across individual units, working together to design funding submissions, co-presenting at seminars and conferences nationally and internationally, co-authoring publications and resolving related issues.

During our research process, the ECEC team moved towards an online presentation of coursework that made significant changes pedagogically, psychologically, epistemologically, and socioculturally for our students and ourselves as teacher educators and learners. We investigated our mindsets as collaborating ECEC academic staff in the early stages of exploring both the conceptual and theoretical framework of the courses, and the establishment of guiding principles for the online curriculum design, including what each academic wanted to achieve with students. The study enabled critique of our assumptions, whilst looking in depth at our practices and how they fit with our beliefs. Our self-study project focused specifically on distance learners, and extended our pedagogical practices in the online environment. The act of putting pedagogy ahead of technology (Ascough, 2002) allowed us to achieve more effective teaching and learning in our online distance education courses. While each of us had espoused a socioconstructionist perspective to our teaching and learning strategies, we held a variety of conflicting conceptual perspectives when using this language within our teaching and learning.

Conceptual frameworks informing the move to online teaching and learning

This self-study focused our attention on practices in designing for interactive online education. We investigated curriculum, theory, and practice, as well as how to enhance the sociocultural links amongst our students. We came to recognise the personal links that shaped our identity as teacher educators.

Three theories contributed towards a shared conceptual framework. While socioconstructionist theory (Gubrium & Holstein, 2008) guided our original planning, Hong and Sullivan's (2009) understanding of learning as knowledge creation also contributed to our evolving conceptualisations about teaching and learning in online courses. In addition, Edwards' (2010) notion of 'teaching through assessment' demonstrated implications for online teacher education. Conceptual consistency across our teacher education programs was essential in the development of our conceptual framework and is supported by Hoban (2005). These three theories are outlined below.

Developing a shared socioconstructionist pedagogical philosophy

In order to negotiate the transition to a pedagogy of teacher education within an online environment, the ECEC team believed in the importance of developing a shared philosophy. We needed a shared position from which to begin and a projection of where we wanted to go. We built upon our intention to open up more dialogic possibilities within the online learning environment. Our constructionist ideas were informed by Gubrium and Holstein's (2008, p. 3) statement that 'the leading idea always has been that the world we live in and our place in it are not simply and evidently 'there' for participants. Rather, participants actively construct the world of everyday life and its constituent elements.' The ECEC team focused on the importance of engaging students in teaching and learning experiences they were likely to find useful in their own practice (Edwards, 2010). We no longer planned to teach in a way that treated students as isolated learners passively receiving the theories, concepts and ideas in the readings sent to them in the postal system. Rather, we embraced the following three philosophical statements:

1. **We believe that our students are members of wider learning circles: their course and units, the university, early childhood contexts, families, local communities and beyond.** We respect students' previous experiences, values, understandings, beliefs and insights. We acknowledge the unique contribution of the personal professional knowledge that all students bring to each unit. Our goal is to facilitate opportunities for students to communicate, reflect, share, and respond to, or about, their sociocultural histories in the online environment.

Hong and Sullivan (2009) support such a position, and argue for a rethinking of the nature of designed instructional activities as undefined, emergent and self-organizing, in order to achieve higher levels of adaptiveness. Our students were representative of very diverse roles in rural, regional and urban contexts. They were directors of childcare centres, family day care providers, childcare workers in health and community organisations, primary school teachers and lecturers in tertiary settings. Therefore, our online pedagogy required flexibility, adaptability and space to allow both know-how and know-that knowledge to emerge as functions of teaching and learning through assessment (Edwards, 2010).

2. **We honour multiple ways of students demonstrating their knowledge, abilities and understandings; and multiple ways of reflecting and communicating.** We recognise that teaching is about change. Through the content, assessment, learning tasks and activities associated with each unit of study within the online environment, students engage *through*

understanding (Hong & Sullivan, 2009) rather than *by understanding*, nurturing their ability to be agents of change.

In our self-study project, the units were reconceptualised within the online learning environment by repositioning the assessments. Like McInnis and Devlin (2002) we believed that online assessment offered an opportunity to examine what we did and why we did it; and to come to an agreement about how to make the changes we needed in our practice to fully implement our philosophies. Similarly, we determined that it was important for our students to engage in the same practice of examining what they did, and more importantly why they did it.

3. **We believe that social interactions form a pivotal base for effective learning processes. Interaction among students plays a central role in learning.** Our goal is to create online units facilitating an authentic form of interaction in which students experience learning as meaningful and supportive. Our intention is for students to feel purposefully engaged in the online learning environment to enhance their own learning goals, rather than because they have been instructed to do so.

Our reconceptualised use of the Sakai LMS was pedagogically aimed at developing a community of learners who built a collaborative knowledge base through resource sharing and personal reflection. We focused on building upon what students had already experienced and what they already knew. Then we engaged them in identifying what was possible within their own sociocultural environments. The students had the opportunity to flexibly work in groups to arrange their learning, which enabled them to create joint documents and other forms of presentation. As the students' knowledge and understandings evolved, they could change or modify the content and had access to this record of development. For example, the Wiki, as a group collaboration space, assisted in developing a community of learners who built a collaborative knowledge base in the process of resource sharing and personal reflection.

We acknowledged that the teaching and learning in our two degree programs prepared students for various employment opportunities in local, national and/or international communities. Our goal was to utilise the tools in the online learning environment to scaffold students' engagement with, and in, contemporary knowledges, cultural sensitivity and understandings, and diverse leadership, problem solving and collaborative relational skills – all requirements in the complex profession of early childhood education. We facilitated opportunities for our students to share knowledge between peers and work together to problem solve and construct group responses to assessment tasks. They were encouraged to create and embody new knowledge, skills and understandings. These opportunities to operate within groups supported students' exploration of the application of theory and their examination and refinement of instructional practices to improve teaching and learning processes for children in their workplace.

The collaborative environment included small group work, yet moved beyond this notion to 'where an individual's interests are pursued through evolving and continuing intellectual relationships with others (Hong & Lin, 2008) towards the end of advancing public knowledge' (Hong & Sullivan, 2009, p. 12). The assessment tasks required students to work in course groups, as well as engaging them in learning experiences that required collaboration with colleagues, families and children.

Our goal was to have the students challenge taken-for-granted ideas, develop new languages and discourses with fresh perspectives and lenses as educators, rather than reproduce the theories, concepts and ideas in identical essays. For example, they became creators of knowledge through critical engagement within the course, representing their learning in a variety of formats. These assessment practices have brought into focus important aspects of the intellectual side of becoming a teacher –

critical engagement with theory, robust and continual synthesis of ideas, and active participation in decisions about the substance and nature of their own learning and how they learned to be teachers (Erickson, Darling & Clarke, 2005).

Enacting socioconstructionist pedagogy: Teaching and learning through assessment

Our units were becoming progressively more flexible in content, tasks and assessment as we built our confidence in this form of curriculum design and implementation. Our focus shifted to prepare students who were capable of changing the ECEC context, using adaptive skills, which could go beyond curricular and disciplinary boundaries.

Allen and Long (2009) have suggested that Australian higher education has been slow to appreciate and respond to, not only the opportunities of the social media-enabled learning environment, but also the challenges impacting on existing educational practices. For example, McInnis and Devlin (2002, p. 1) had indicated that, 'there is considerable scope to make assessment in higher education more sophisticated and more educationally effective. Assessment is often treated merely as the endpoint of the teaching and learning process.' In our degree programs, students considered their assessment as the beginning of new practices suitable for use in their own professional environments.

The ECEC team's shared philosophy, as described above, was continually revisited through the research process that examined the courses, learning outcomes and assessment tasks, and investigated strategies and content for achieving those outcomes. Analysis of the transcripts from the weekly meetings identified that we valued students working within authentic contexts of professional learning. This finding led us to adopt the framework of 'teaching and learning through assessment' (Edwards, 2011). Edwards demonstrated how the online learning environment and assessment tasks could be designed to support students to simultaneously create their own learning contexts, access the intended content in multiple ways, and represent their own interpretations of both the content and theory/practice in publishable and public forms.

Our uses of technology and assessment were negotiated as we transitioned to create online opportunities in which theory and practice were viewed as an integrated process. The students were encouraged to explore the pedagogical possibilities of the online learning environment tools, and to support one another within collaborative learning groups. The teaching through assessment framework assisted the ECEC team to create contexts aligned with their philosophy.

Rather than regurgitating lectures and readings, the assessment tasks and tools used in the online learning environment provided a context for the theories, ideas and concepts to be practically demonstrated. Through a greater understanding of how learning took place for our students, we facilitated student engagement with the content and their critical consideration of how it could be used to move their own thinking forward (see Green, Edwards, Wolodko, Stewart, Brooks & Littledyke, 2010, for further details).

The reconceptualised assessment at times required students to work together to agree on a common artefact of their learning. At other times, individual tasks required student collaboration with colleagues, families and children. Analyses of the student survey and the learning artefacts submitted uncovered a wide variety of skills and broad interests, as well as their ability to represent higher-order thinking.

Enacting socioconstructionist pedagogy: Learning as knowledge creation

Hong and Sullivan (2009) suggest that learning can be represented by three metaphors: as acquisition, as participation and as knowledge creation. Teaching and learning through assessment (Edwards, 2010) supported and promoted change to online pedagogy and facilitated the skills, knowledges and

understandings essential in the complex profession of early childhood education. While learning as knowledge creation has been well justified in the literature (Hong & Sullivan, 2009), in our study an important issue that remained to be explored in the reconceptualization work was the question of what represented effective online pedagogy to support learning as knowledge creation.

In our current approach to online pedagogy, we have reconceptualised assessment to reflect learning as knowledge creation, which required examination and changes to our pedagogical, psychological, epistemological, and sociocultural perspectives in the presentation of coursework and learning processes. Our pedagogy of teaching indicated that it is through assessment practices that knowledge is created; knowledge creation results in adaptive know-how and know-that, which results in adaptive interpretation and implementation in the students' various workplaces.

Hong and Sullivan (2009, p. 6) also discuss 'promisingness' as a kind of knowledge that is facilitated in online learning environments through a progressive curriculum that is unfolding and emergent:

> When routine know-how is pursued as an important knowledge goal, know-that is more likely to be specifiable content knowledge that can be used to fulfill the routine know-how. As such, know-that and know-how are both ends of learning, and typically in many school settings they are reified as textbook knowledge guided by a well-structured and circumscribed curriculum. Normally, when curriculum is structured in this way (with routine know-how and specifiable know-that), little room is left for students to develop the third kind of knowledge of 'promisingness'.

Drawing upon the idea of promisingness, we aimed for our students to move away from replicating their practices with textbook knowledge. Rather, we planned for students to use the critical ideas in the literature and in other resources as stimulus to creatively address the assignment questions. Solving problems and inquiring into issues contributed to their growing body of knowledge or sense of promisingness. The notion of learning as knowledge creation in online environments as proposed by Hong and Sullivan (2009) was highly relevant for our students and the early childhood education sector in general. Teaching and learning is context-dependant and requires the critical engagement of students. Such processes are supported and promoted in learning as knowledge creation: advocacy, advancing community knowledge, adaptiveness and promisingness.

Discussion

Understanding the underlying epistemology of teacher education curriculum (or learning design) demands that academics engage in a close examination of their pedagogy. A comprehensive review of curriculum design literature by Green, Wolodko, Foskey and Brooks (in press) identified six curriculum models that co-exist within higher education, thus highlighting the diversity in the epistemological and ontological bases underlying curriculum design within higher education. Our self-study aimed to address the issue of how professional beliefs impact a curriculum design and how a change in curriculum design might also impact professional actions.

We have documented the reconceptualist work of a team of academics as they transitioned from a knowledge acquisition style of teaching to socioconstructionist ideas and concepts of pedagogy in an online environment. The ECEC team's shared socioconstructionist philosophy – which focused many of our past practices in early childhood education settings as educators and leaders, as well as those within higher education settings in face to face teaching and learning contexts, and in work with various groups, committees and organisations – proved to be foundational in guiding our journey towards a different approach to online learning and teaching.

Predominantly, teacher education programs focus on the goals and the type of teacher the university would like to produce (Hoban, 2005). This self-study challenged nine academics to move beyond a limited traditional focus to examine how an educator creates professional knowledge and reconceptualises the curriculum along with its multiple interrelated elements. Like Novinger, O'Brien and Sweigman (2005), we have challenged the *culture of expertise* that guides current practice in teaching and learning with higher education students. Epistemologically, we have journeyed from a routine know-how and predefined know-that towards an adaptive know-how and emergent know-that. The ECEC team has worked to reconceptualise expertise as being developed in dialogue with, and between, students, rather than something expert lecturers bring to the table. As a result of the reconceptualised online pedagogy being provided by the ECEC team, students are more productively engaged in assessment, sharing their knowledge and supporting one another in knowledge construction. Adaptive know-how has been viewed as the primary learning goal rather than assessing the course's content. In teaching through assessment, know-that (or declarative knowledge) becomes less specifiable ahead of time. In the process, we journeyed from scripted cooperation to knowledge exchange in a collaborative culture. The community knowledge in the learning artefacts was greater than the individual knowledge of each student. The community also extended beyond the university into the students' workplaces.

The researchers' goal was to prepare graduates with the skills, confidence and willingness to be open to new possibilities in their current and future workplaces. We designed assessment tasks where students became aware of the importance of asking questions that challenged old beliefs, and deepened their understandings. The learning processes have been reconceptualised as self-sustaining and generative. As educators, we have made changes to our basic epistemological perspectives, our knowledge of what it means to learn, as well as our conceptions of classroom practice (Franke, Carpenter, Fennema, Ansell & Behrend, 1998). In doing so, we now model these for our students in the relevant online learning experiences we create. Psychologically, we have journeyed beyond a controlled process in which the learning artefacts students could produce were limited and typically homogenous. We came to understand that we had created barriers when assessments were the endpoint. Now, we contextualise assessment questions and issues within the students' workplaces. We think of knowledge creation as conceptualised from a process perspective, as opposed to an outcome one (Hong & Sullivan 2009), with progressive problem-solving as the focus of student learning.

Our purpose in sharing this research journey is to encourage a deeper conversation within higher education, including teacher education, ECEC and distance education communities. Our approach affirms the importance of higher education responding to the increasingly political, technological and sociological demands on teacher education (Early & Winton, 2001). This self-study process, combined with the synergy of working in a team, offers an approach to curriculum design for distance education and online learning. We have come to realise there is no endpoint for such reconceptualist work in teacher education and we support Schroeder, Minocha and Schneider's (2010) suggestion that higher education is still in the process of understanding how this work shifts the role of the educator. We recognise the delicate position of the higher education teacher within social media-enabled learning: there is a tenuous balance between the egalitarian principles underlying social software applications, and the 'goal oriented nature, and limited time-frame of a university course' (Schroeder, Minocha & Schneider, 2010, p. 557). It is imperative to communicate, and ultimately, evaluate innovations in this area that are currently underway within higher education.

Notes on Contributors

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References

Allen, M. & Long. J. (2009). Learning as knowledge networking: Conceptual foundations for revised uses of the Internet in higher education. In S.I. Ao, C. Douglas, W.S. Grundfest & J. Burgstone (Eds), *Proceedings of the World Congress on Engineering and Computer Science* (pp.652–657). Hong Kong: Newswood.

Ascough, R.S. (2002). Designing for online distance education: Putting pedagogy before technology, *Teaching Theology and Religion, 5* (1), 17–29.

Clandinin, D. J., & Connelly, F. M. (2004). Knowledge, narrative, and self-study. In J. Loughran, M. Hamilton, V. LaBoskey, & T. Russell (Eds.), *International handbook of self-study of teaching and teacher education practices* (pp. 575–600). Boston: Kluwer Academic Publishing.

Early, D.M. & Winton, P.J. (2001). Preparing the workforce: Early childhood teacher preparation at 2- and 4-year institutions of higher education. *Early Childhood Research Quarterly, 16,* 285–306.

Edwards, S. (forthcoming, accepted 7/6/2011). Teaching through assessment: Merging technology and assessment in teacher in education. Teachers and Teaching.

Erickson, G., Darling, L., & Clarke, A. (2005). Constructing and sustaining communities of inquiry in teacher education. In G. Hoban (Ed.), *The missing links in teacher education* (pp. 173–192). Amsterdam: Kluwer Press.

Franke, M. L., Carpenter, T., Fennema, E., Ansell, E. & Behrend, J. (1998). Understanding teachers' self sustaining, generative change in the context of professional development. *Teaching and Teacher Education, 14*(1), 67-80.

Green, N.C., Edwards, H., Wolodko, B., Stewart, C., Brooks, M. & Littledyke, R. (2010). Reconceptualising higher education pedagogy in online learning, *Distance Education*, *31*(3), 257–273.

Green, N.C., Wolodko, B. Foskey, R. & Brooks, M. (In Press). *Social media-enabled learning and the curriculum in Australian higher education: A literature review*. University of New England: DEHub.

Gubrium, J.F. & Holstein, J.A. (2008). The constructionist mosaic. In J.A. Holstein & J.F. Gubrium (Eds). *Handbook of Constructionist Research* (pp. 3–10). New York: Guilford Press.

Hoban, G.F. (2005). *The missing links in teacher education design: Developing a multi-linked conceptual framework*. Dordrecht: Springer.

Hoban, G.F., Loughran, J., Hamilton, M.L., LaBoskey, V., & Russell, T. (Eds.). (2004). International handbook of self-study of teaching and teacher education practices. Dordrecht: Kluwer.

Hong, H-Y. & Sullivan, F.R. (2009). Towards an idea-centred, principle-based design approach to support learning as knowledge creation, Educational Technology Research & Development, 57, 613-627.

Hunt, C. (2006). Travels with a turtle: metaphors and the making of a professional identity. Reflective Practice: International and Multidisciplinary Perspectives, 7(3), 315-332

Korthagen, F. & Vasalos, A. 2005, Levels in reflection: Core reflection as a means to enhance professional growth. *Teachers and Teaching: Theory and practice*, 11 (1), 47–71.

Laboskey, V. (2004). Moving the methodology of self-study research and practice forward: Challenges and opportunities. In Loughran, J., Hamilton, M. L., LaBoskey, V., & Russell, T. (Eds.), *International handbook of self-study of teaching and teacher education practices* (pp. 1169 - 1184). Dordrecht: Kluwer.

Lakoff, G. & Johnson, M. (1999). *Philosophy in the flesh*. New York: Basic Books.

Loughran, J. (2006). *Developing a Pedagogy of Teacher Education: Understanding teaching and learning about teaching*. Milton Park: Routledge.

Loughran, J., Hamilton, M.L., LaBoskey, V., & Russell, T. (Eds.). (2004). International handbook of self-study of teaching and teacher education practices. Dordrecht: Kluwer.

McInnis, C. & Devlin, M. (2002). *Assessing learning in Australian universities*. Melbourne: Centre for the Study of Higher Education, The University of Melbourne & The Australian Universities Teaching Committee.

Novinger, S., O'Brien, L. & Sweigman, L. (2005) Challenging the Culture of Expertise: Moving beyond training the always, already failing early childhood educator. In S. Ryan & S. Grieshaber (Eds). *Practical transformations and transformational practices: Globalization, postmodernism, and early childhood education* (217–242). Oxford: Elsevier.

Roughton, C., Martin, F., Warren, J., & Gritmon, C. (2011). Challenges in synchronous virtual classrooms adopted by faculty, *International Journal of Instructional Technology, 8*(2), 45–54.

Samaras, A., & Freese, A. (2009). Looking back and looking forward: An historical overview of the self-study school. In C. A. Lassonde, S. C. Galman & C. M. Kosnik (Eds), *Self-study research methodologies for teacher educators* (pp. 3–20). Rotterdam, The Netherlands: Sense Publishers.

Savin-Baden, M., Gourlay, L., Mawer, M., Steils, N., & Tombs, G. (2010) Situating pedagogies: Positions and practices in immersive virtual worlds, *Educational Research*, *52* (2), 123–133.

Schroeder, A., Minocha, S. & Schneider, C. (2010). The strengths, weaknesses, opportunities and threats of using social software in higher and further education teaching and learning. *Journal of Computer Assisted Learning, 26*(3), 159–174.

Wolodko, B., Stewart, C., Green, N.C., Edwards, H., Brooks, M., & Littledyke, R. (Accepted, 2011). Shifting mindsets within: Self-study of professional learning. In B. Tynan & J. Willems (Eds). *Global challenges and perspectives of blended and distance learning*. Athabasca: Athabasca.

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