Exploring shifting conceptions of knowledge and learning: A collaborative project in teacher education

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Jane Abbiss
School of Māori, Social and Cultural Studies in Education
University of Canterbury, New Zealand
jane.abbiss@canterbury.ac.nz

Abstract

Societal changes in the "knowledge society" present challenges for teacher educators charged with the preparation of teachers who will shape the learning experiences of young people in schools. A major challenge is to find ways in which these changing needs and conceptual shifts can be explored and understood by education practitioners. This paper introduces a work in progress – a Teacher Research Learning Initiative (TLRI) research project funded by the New Zealand Council for Educational Research (NZCER) – that is attempting to do this through a collaborative action research project in the context of the new New Zealand Curriculum and encompassing a range of curriculum contexts. Framed as a collective case study with multiple (nine) contributing cases, the project involves participating teacher educators in action research relating to their work in initial and continuing teacher education. The action research construction of the project affords opportunities and presents challenges in relation to knowledge re-conceptualisation and the engagement of teacher educators in initial and continuing education in teacher research.

Introduction

The research that is described in this paper is a project that engages teacher educators who are involved in initial and continuing education in an exploration of shifting conceptions of knowledge and learning and the implications these conceptual shifts may have for their practice as teacher educators and for those they work with, teacher candidates and practicing teachers in schools. The policy context of the study is the recently developed New Zealand Curriculum (Ministry of Education, 2007), which is shaped in part by discourses of the "knowledge society" and postmodernity. This

curriculum incorporates principles, values and key competencies that emphasise critical thinking, a futures focus and recognition and valuing of diversity, amongst a range of guiding and overarching ideas. These ideas are intended to infuse all learning areas (disciplines). The introduction of a new curriculum has precipitated rethinking about what could and should be done in teacher education to prepare teachers to engage with the curriculum and with ideas about what teaching and learning is about in New Zealand classrooms in different discipline contexts. The institutional context for the research is the University of Canterbury (UC) College of Education, which has a range of qualifications and programmes for initial teacher education and teacher professional development. The College is a recently constructed entity, resulting from the merger of two previously independent tertiary institutions – the UC Department of Education and the Christchurch College of Education. This merger has brought together academics and practitioners from both institutions into one body. A group of teacher educators from the merged institution have united to engage in research aimed at transforming their own practice and effecting change in teaching and learning in schools.

The research discussed herein is a two-year project that is approaching its mid-point. It is work in progress. The first part of the paper provides an outline of the research project, its theoretical foundations and methodology. The second part provides preliminary observations about the opportunities afforded and the challenges presented by action research in relation to knowledge re-conceptualisation. These observations are at this stage in the research necessarily tentative, partial and speculative. They constitute questions and ideas for further exploration as the project progresses rather than findings.

Research outline
Theoretical foundations
Theoretical literature calls for a paradigm shift and the re-conceptualisation of knowledge in educational policies and practices to better address the needs of learners in the twenty-first century (Andreotti & Souza, 2008; Hargreaves, 2003; Lankshear & Knobel, 2003). There are calls to redefine what it means to achieve (Gilbert, 2008), to teach for understanding rather than for knowing (Hook, 2006), to engage differently with new technologies (Kellner & Share, 2007), to equip learners to participate in a

knowledge society as producers rather than consumers of knowledge (Gilbert, 2005), and to re-conceptualise what it means to be a learner or a teacher (Davis, Sumara & Luce-Kapler, 2008). Such calls are part of a broad movement and twenty-first century discourse that advocates for the creation a new type of education that is transformative rather than transmissive (Sterling, 2001).

Theoretical and empirical work relating to twenty-first century learning has implications for teacher education and teacher professional development. Chief amongst these is the notion that practitioners (teachers) need to perceive knowledge, learning and education in ways that are different to those most of them experienced as learners. This means shifting the ways in which they "know" and "see" as well as what they "do" as educators. It involves epistemological and ontological shifts about knowledge and knowledge construction (Andreotti & Souza, 2008; Gilbert, 2005; Hargreaves, 2003; Hipkins, 2007). A premise of this research is that practitioners need to engage with complexity and uncertainty, to explore their own lenses or ways of knowing and seeing the world, in order to consider the needs of students in different educational contexts and engage critically with different educational possibilities. If teachers can shift their understanding of knowledge and learning, they will acquire more lenses to interpret and relate to the society in which they live and work, their students and students' communities, their own identities as learners and as teachers, and to understand more deeply social differences, conflicts, problems and solutions. They will therefore be better equipped to respond to complexity, diversity, change and uncertainty in a rapidly changing and increasingly globalised world (Andreotti, 2007). As teachers need to engage with complexity, so do teacher educators. Teacher educators need to engage with issues relating to context, uncertainty and difference in their practice and explore their own and various lenses in order to consider the needs of teacher candidates and practicing teachers with whom they work.

Ideas relating to a knowledge society, twenty-first century thinking and transformative education for the twenty-first century are contestable. It can be argued, for example, that the twenty-first century discourse has been appropriated by a neo liberal agenda and represents a continuation and different face of modernity rather than something radically new or different (Bauman, 2000, 2005). Such arguments are

important for understanding the ideological nature of the discourse. However, the twenty-first century discourse also presents a vehicle for exploring ideas and challenging practices. In this project, a conscious choice has been made to "explore the productive potential of the appropriation of these discourses in specific contexts, specially their capacity to equip educators to address complexity, contingency, diversity and uncertainty" (Andreotti, Fa'afoi & Giroux, forthcoming). Practitioner researchers are exposed to different approaches and ways of viewing epistemological change, invited to critique different ideas and perspectives and to consider and select what is possible and appropriate in the context of their work and the curriculum change around which their work revolves.

The transformative purpose and an underlying social justice rationale of the project resonates with literature relating to teacher research and collaborative action research that challenges assumptions about what educational research should do and who it is for (Carr & Kemmis, 1986; Cochran-Smith, 1993; Noffke & Somekh, 2009; Zeichner, 2009). The TLRI project constitutes action research not in the technical sense of a prescribed methodology, sequence of action or use of particular methods, but in adherence to the broad notion of action research as self-study and the systematic inquiry of practitioners related to their own practice (Cochran-Smith, 1993; Noffke & Somekh, 2009), as a commitment to personal and professional reflection and development (McNiff, 2002; Somekh, 1995) and as a form of research concerned with social justice (Noffke, 2009; Zeichner, 2009). The project is consistent with a number of the broad principles of action research (Somekh, 1995). Firstly, it bridges the divide between research and practice. The nine different initiatives that are the core of the project relate to the practice and unique workplace contexts of the participant-researchers. These practitioners are insiders in the research process. Secondly, the findings from the initiatives are intended to feed back into practice and bring about change, directly in the work of practitioner-researchers and researchers and indirectly through potential influence on policy and the work of other educators. Thirdly the research is pragmatic. It is focused on practitioner needs and located within political and organizational structures that can both enable and limit what can be done.

Methodology

4

The project draws together participant-researchers and researchers who are interested in exploring teacher education practices and possibilities for change through collaborative endeavour. The first year of the project has focused on design, implementation and initial data analysis for the contributing case study. The second part of the process will involve the writing of the case studies and the meta analysis that will address the research questions across all of the cases.

The research questions are:
1) How are shifts in conceptualisations of knowledge and learning interpreted within the different knowledge domains of the practitioners in this research? How do these shifts affect the way the revised New Zealand Curriculum is interpreted and implemented?
2) What are the characteristics of effective initiatives for shifting student teachers' and teachers' conceptualisations of knowledge and learning?
3) How do shifts in the conceptualisation of knowledge and learning affect student teachers' and teachers' interpretations of the revised New Zealand curriculum?

The participants in the research project include nine practitioner-researchers who are teacher educators, three researchers, and the student teachers and practicing teachers who are participants in various courses that are the context of the practitioner-researcher inquiries. The practitioner-researchers are engaged in: a) exploring new personal conceptions of knowledge; b) designing pedagogical and curriculum initiatives that challenge ideas about knowledge, teaching and learning and are implemented in the specific context of their practice; and c) designing a research strategy, collecting data and analysing the nature of student teachers and teachers' understandings about teaching and learning and shifts in their conceptualisations that occur through the pedagogical initiatives. In so doing the practitioner-researchers engage in the design and development of systematic inquiries relating to their own work and critical reflection relating to their practice. The researchers take the roles of mentors, critical friends and co-learners in the process as well as having responsibility for the oversight and meta analysis across the multiple contributing practitioner-researcher projects. Each researcher works with a small group of practitioner-researchers in a mentor group, but the larger group also gathers together to explore ideas, consider ways of interpreting data, and to write.

The overall context of the project is teacher education. However, it encompasses various and particular curriculum settings within which individual practitioner-researcher inquiries are situated. The research design is multi-layered (see Figure 1)

Figure 1: Research design
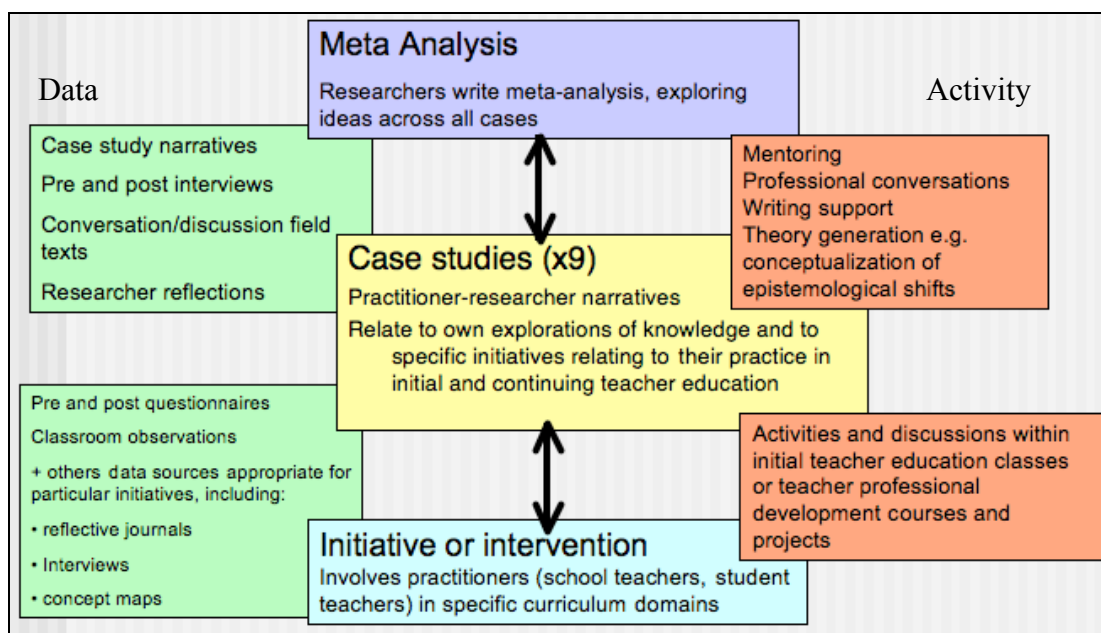
The nine initiatives involve four teacher educators who work in initial teacher education and five who work in continuing teacher education. The projects relate to primary (elementary) and secondary (high school) schooling contexts and a range of disciplines or fields. The initiatives are varied and include, for example, an exploration by an initial teacher educator of teacher identity and beliefs about teaching and learning in the context of primary Professional Studies and Professional Practice and an initiative exploring language learning in cross-curricula units in teacher professional development for teachers of English as a second or other language (ESOL).

As part of the self-study process, participant-researchers and researchers engage with a range of ideas and pedagogical tools that invite them to consider ideas relating to epistemological shifts and how these can be understood and identified. These tools are used to bridge understanding in relation to the research itself and the theoretical debates. In particular, they enable educators to engage with complexity in the debate

and contemplate different perspectives, to address the interface between mainstream and emergent thinking, to explore the partial and limited nature of thinking tools, to engage critically with the tools and make connections with their own work and interests, and to think beyond what is presented in the debate and the tools themselves to find a voice and express their own ideas about what is possible in the context of their own practice (Andreotti, Fa'afoi & Giroux, forthcoming). These tools include amongst others: a) Multiple Meanings, a representation of distinct interpretations for meanings of the words 'global society', 'participate' and 'equip', based on modernist and discursive ways of thinking (Andreotti and Souza, 2008); b) Comparing Conceptualisations of Knowledge, which is based on Gilbert (2005) and presents ideas of knowledge as a noun, that is passive, accumulated and held by experts, and knowledge as a verb, that is socially constructed, active and changeable; c) Matrix of Educational Approaches, which combines different ideas of knowledge and education and presents distinctions between four educational approaches (Andreotti and Souza, 2008); and d) Model of Epistemological Development, from Magolda (1992a, 1992b), that identifies four stages of epistemological thinking and understanding, and Moon's (2005) adaptation of this relating to critical thinking.

Observations

Constructed as practitioner (action) research, structured as a collaborative case study, and focused on knowledge reconceptualisation, the TLRI project presents opportunities for new thinking and change in educational practices – in teacher education and in schools – and presents challenges relating to knowledge re-conceptualisation and the engagement of teacher educators in the research process. These opportunities and challenges resonate with extant literature, while the context and situated nature of the research means it also presents particular perspectives and specific negotiations of meaning, relevance and implications for practice. The ideas presented here are tentative and represent my initial personal reflections, based in observations and conversations with colleagues involved in the project. It is expected that these ideas will change, develop, be challenged and perhaps rejected, as the individual case studies are further developed and the meta analysis undertaken.

Opportunities

In relation to learning about epistemological shifts, which is the focus of the project and shared intent of all the contributing initiatives, the project invites the researchers and participant researchers to engage with theory and explore the relevance of different theoretical understandings in different practice contexts. This engagement has afforded critical discussions about ideas, models and tools relating to identification of epistemological perspectives and epistemological shifts. For example, in one mentor group discussion relating to Magolda's (1992a, 1992b) model addressed the positivist and biologically deterministic foundations of the model, potential issues relating to deficit thinking and labelling of teacher and student participants as fitting within hierarchical stages, the individualistic and cognitive focus of the model and its foundation in western rationalist thinking, and the possibility of alternative perspectives and different cultural ways of knowing. It led to a search by one of the practitioner-researchers for an alternative model and way of considering what student and teacher participants in the curriculum initiatives were saying about teacher professional identity and what this revealed about their epistemological positions and thinking. A tool that provided more nuanced understanding and representation of personal ways of knowing was found in the form of Hofer's (2004) epistemological dimensions. This alternative tool seemed to be useful and to provide a more meaningful way of identifying and considering students' epistemological understandings in the context of a particular pedagogical initiative. Hofer's model, like Magolda's, has positivist and deterministic foundations. However, rather than reject the use of a model relating to personal epistemology, it has been adopted as a way, but not the only way, of understanding the epistemological positions and thinking of students in the class. The research process has thus invited critical engagement with ideas about epistemological understandings and how different models or tools present different ways of representing epistemological thinking that are social constructions, partial and contestable.

The overt intention of the project to reconceptualise knowledge, consider multiple perspectives and afford a critical view of curriculum and classroom practices by drawing individuals from an institution together to work collaboratively on a shared project could be construed as contributing to a broad struggle for social justice (Zeichner, 2009) and as an intentionally political and strategic action (Somekh, 1995). This political action is afforded through both the focus of the overall study, the

encompassing methodology and specific case study initiatives. Perhaps the most overt of the cases to address an issue of social justice is the one that relates to a cultural studies course in the Bachelors of Teaching and Learning (Primary Education) at the University of Canterbury. The stated aim of this course was to "develop learners' [student teachers'] awareness of their own worldviews and lived experiences in relation to questions of culture, identity, power, knowledge, diversity and globalization, as well as the implications of those for teaching and learning" (EDML151 Course Outline 2009, cited in Andreotti, Fa'afoi & Giroux, forthcoming). In developing the course and engaging in the research initiative, a shift was affected from transmission of knowledge and concepts to the deconstruction of concepts and understanding. Rather than focus on the definition of terms, particular cultural narratives and the presentation of strategies to manage diversity, the course instead has begun to focus on unpacking and developing students' understandings of diversity and knowledge construction itself. The development of an analytical tool that describes ethnocentric and ethnorelative ways of knowing and initial analysis of students' journal data provides a view of student teachers' learning in the course, their developing ideas about 'multiculturalism', 'racism', 'whiteness', and 'fairness' (amongst others) and the ways in which these appear to be understood – recognizing at the same time that the models or lenses used to understand and interpret students' reflections are themselves partial and contingent (Andreotti, Fa'afoi & Giroux, forthcoming).

The methodology adopted challenges power structures and ideas of who can know and how one can know. In constructing the project as a collaborative endeavour grounded in specific and varied case studies relating to practice, there is both tacit and overt acceptance of the importance of teacher knowledge and of teachers as 'knowers' (in this project the teachers are teacher educators in initial and continuing education). In the specific context of teacher education at UC, the project affords an opportunity to bring together teacher educators who are engaged in initial teacher education (preparation of new teachers) and in continuing teacher education (professional development of practicing teachers), and researchers and teacher educators with greater and lesser experiences as researchers. Within New Zealand academic structures and education faculties, as elsewhere in the world, there is a hierarchy of knowledge and knowing (Cochran-Smith, 1993; Jesson, 2007; Zeichner, 2009). At the

University of Canterbury there is also a hierarchy within teacher education, where those involved in continuing education in particular are positioned as practitioners and 'doers' and those in initial teacher education are positioned to a greater extent as academics and afforded greater opportunity to engage in educational research. Continuing teacher education and its educators are located in an administrative unit that is dependent on Ministry of Education funding streams and the priorities that the Ministry sets for teacher professional development. It sits outside of university performance-based research structures. This collaborative research project makes the boundaries between initial and continuing education more permeable by presenting opportunities for educators in initial and continuing teacher education to work collaboratively, to learn from and with each other as they engage in research relevant to their particular curriculum contexts and practice interests.

Each of the constituent projects is an initiative or intervention of some sort relating to national curriculum developments. They each represent a conscious change in practice for the participant-researchers. In turn, they have the potential to stimulate change in the practices of teachers in schools. The research is thus more than an intellectual exercise. It positions those involved as change agents and affords opportunities for change through the insider participant-researchers that tend not to be available in traditional academic outsider research. In this it might be seen "not as research about education but as research for education" (Carr & Kemmis, 1986, p.4).

Challenges

As the research affords opportunities, so does it present challenges, and what is an opportunity might also present challenges for the project as a whole and for the individuals involved.

One challenge relates to power-relationships and different knowledges. Within this project, the teachers who are engaged in teacher researcher are tertiary teacher educators. The participant-researchers and researchers have experience of teaching in schools or have been primary or secondary school teachers before becoming teacher educators. They have practice knowledge, albeit differently constructed practice knowledge acquired in different landscapes (Connolly & Clandinin, 2007). There are also different levels of experience of academic research in the group. In the worlds of

universities and educational research, academic and practice knowledges do not constitute the same currency and do not have the same exchange value (Quinlivan, Boyask & Carswell, 2008). Thus there are subtle and ongoing negotiations of relationships between researchers and practitioner-researchers as the specific initiatives unfold. Whilst the individual initiatives relate to the practitioner-researchers' work, the overall project has in effect been designed for them. They are fitting into a bigger structure that has goals and requirements for data collection that are not of their making. Thus the negotiations are not really even. The researchers, while also positioned as learners along with the practitioner-researchers, have more of a say in the structuring of the 'big picture.' This raises questions about the degree of ownership of the endeavour, which may be different for different practitioner-researchers, and perceptions of differential power where there are both 'top down' and 'bottom up' characteristics to the research (Somekh, 1995; Zeichner, 2009). Having said this, the different levels of research knowledge and experience mean that the researchers play an important role in guiding and supporting individual initiatives. Their role as critical friends is important if the project is to avoid being ingrown or content-less (Somekh, 1995), to maintain the ideological and methodological integrity of both individual projects and the overall project and establish confidence in the quality of the research as practitioner research (Zeichner, 2009).

Challenges also arise relating to politics and institutional context that raise questions about motivation for involvement in the research by the researchers and practitioner-researchers and what they seek from the research. The ecology or working environment of the practitioner-researchers who are involved in continuing education is particularly confining and constraining. Their jobs are uncertain, dependent on Ministry funding and professional development contracts, and to a degree dependent on them proving the value of the professional development that they deliver. This 'worth' is judged in terms of improved teacher performance and outcomes for students in schools. In contrast, the outcomes by which the performance is assessed of the initial teacher educators who are practitioner-researchers relate more to research engagement and publications. Participation in the TLRI project, then, may serve different purposes for different practitioner-researchers. This could potentially influence how individual projects are written up and whether the practitioner-researchers are drawn towards a critical narrative or a verification narrative, or some

other type of narrative. A critical narrative would focus on critique, new ideas, disjunctions and disturbance, and acknowledgement where and how actions taken may or may not be consistent with the good intentions or philosophy; a verification narrative would in contrast act to 'prove' how what is done is good and act as self-justification.

Focusing as it does on ideas relating to knowledge construction, engagement in the project potentially challenges ideas about teacher professional identity(s). It brings to the fore questions about who teacher educators are and what they do. It leads to potential dissonance and discomfort as teacher educators' critically consider their own practices in the induction and professional development of teachers. Conversations with one of the practitioner-researchers indicate that for her it has highlighted a disjunction between her rhetoric and practice in the classroom – a difference between "talking the talk" and "walking the talk." As a researcher in the project and fellow teacher educator, I have found myself similarly cogitating and being discomforted by recognition that what I think I may be doing and achieving in classes I teach may not be what I am actually doing. The very act of my involvement in the project has forced me to consider who I am and what I do and the contradictions this may entail in terms of my beliefs about my role and my efficacy. This may be a stimulating place to be, but it is not a particularly comfortable place. It is personally challenging and it inspires an emotional as well as a cognitive response. The notion of identity or subjectivity and the negotiation of identity may be something that warrants greater attention as the project progresses.

These observations of challenges relate to broad concerns of a philosophical nature around the action research construction of the TLRI project, elucidated from my perspective as a researcher in the project. There are other challenges of a practical nature, including for example issues relating to timeframes and competing work pressures, case study construction and writing, amongst others that have not been addressed. There will be other challenges that arise as the project progresses and different participants would experience, select and highlight different points. The reflections on opportunities and challenges herein highlight some ideas that have emerged and may need further consideration as the practitioner-researchers write their case studies and as the researchers embark on the meta analysis phase of the project.

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