

Using Case Stories as a Tool for Listening More and Telling Less in Mathematics Teacher Education¹

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This inquiry synthesises the stories of one prospective teacher and a teacher educator into a narrative that describes how case investigations and the writing of case stories can enhance learning within communities of practice. The narrative highlights the importance of critical reflection and shared conversation in recognising the silent messages that we hold and send. The writing of case stories is presented as a tool for critically reflecting on beliefs and practices and learning from each other. The implication for teacher educators is that we need to listen more and tell less if we want to shift the ownership of learning to prospective teachers so that their sense of identity is enhanced.

This paper provides a snapshot of one aspect of a longitudinal study undertaken with final year prospective teachers within a community of practice. Wenger's (1998) extensive work on communities of practice has provided a way of thinking about shared learning that allows different perspectives to be articulated as "learning". The inquiry extended over a one-year period as we sought to work collaboratively as researchers and learners inquiring into our practice during a subject titled "Assessment and Diagnosis across the Curriculum: Mathematics Lobe". Our year together can best be described as working within a community of inquiry that sought to focus on improving practice and pedagogical understanding. The use of case investigations and case stories are put forward as pedagogical tools that allow for such an approach to teacher education. The experiences are interpreted and shared as a narrative to illustrate the salient features of participating in a community of practice where the practice takes the form of teacher research. All references to "teacher research" are inclusive of both my own experiences as a teacher educator and the experiences, as outlined in a case story of one prospective teacher.

Theoretical Windows

A number of theoretical windows have been used to frame this study. Wenger's (1998) "social theory of learning" seeks to further theorise the notion of communities of practice and has been helpful in making sense of the experiences in this inquiry. It comprises four main perspectives of learning: learning as belonging to a community; learning as experience in the pursuit of meaning; learning as doing within a variety of practices; and learning as becoming, which focuses on identity formation (Wenger, 1998 p. 5). According to Wenger (1998), all these elements are "deeply interconnected and mutually defining" (p. 5). From the perspective of a community of practice, teacher research can be interpreted as a vehicle for: *learning to belong* in a community of inquirers; *learning from* inquiring into your own practice; *learning through* negotiating to make sense of experience and what it means to teach and learn; and *learning about* our identities—who we are as people and practitioners and as teachers and knowers.

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Teacher Research: Researching From the Inside

For over a decade, there has been a growing acceptance of the transformative possibilities that teacher research can provide (Cochran-Smith & Lytle, 1999). The “teacher research movement” has emerged from a number of intellectual traditions including the literature related to teacher education, professional development, school reform, action research, practical inquiry (Cochran-Smith & Lytle, 1999) and self-study (Loughran & Russell, 2002). The commonalities shared by much of this literature reflect an emphasis on the teacher as both knower, and agent for change, which calls for a “blurring [of] the boundaries between teachers and researchers, knowers and doers, and experts and novices” (Cochran-Smith & Lytle, 1999, p. 22).

Similarly, Mason (1998) suggested that the “transformations in the being of the researcher” (p. 357) is one of the most significant products of research. Mason’s (1998) term “researching from the inside” highlights the personal side of research that leads to developing sensitivities, restructuring perspectives, and generating a heightened awareness of what is important to an inquirer’s personal presence, wisdom and insight. The term “self-study” (Hamilton & Pinnegar, 2000; Loughran & Russell, 2002) refers to a practical inquiry undertaken specifically by teacher educators. The purposes of self-study are twofold. In one respect, self-study has a personal and practical purpose related to the improvement of one’s own pedagogical practice. This aspect of self-study has strong parallels with teacher research, although interestingly such parallels are rarely explicated! The other broader purpose is related to the production and advancement of knowledge about teacher education practices. Both purposes have to do with “refining, reforming and rearticulating teacher education” (Cole & Knowles, 1996).

The idea of research leading to self-transformation is an important aspect of any form of inquiry. For this paper, the terms action research, practical inquiry, teacher research and self-study are viewed as synonyms for inquiry that is self-transformative. For all these forms of inquiry, the writing-up stage is a natural progression of the research process and provides an occasion for the development of critical reflection and identity (LaBoskey, 1992, Mason, 1998; Richert, 1992; van Manen, 1997).

Writing to Learn: Developing Case Stories of Experience

Teacher research can be planned collaboratively with a teacher educator and prospective teachers, and then carried out and reported on using written reflections in the form of case investigations (Barnett, 1991; Gore & Zeichner, 1991; LaBoskey, 1992). Case investigations call for prospective teachers to carry out a modified version of case-study research that incorporates aspects of action research or practical inquiry. By identifying an educational concern or issue of interest, reviewing the relevant literature, collecting data, analysing the data and producing a case write-up, case investigations can mediate critical reflection using case stories of lived experience that can be shared collaboratively.

Rather than use cases of other teachers, Hunter & Hatton (1998) argue strongly for the use of cases written by prospective teachers themselves as a powerful way of helping them understand how their world works, as well as make collective sense of experiences from school and university settings. Richert (1992) also suggested that the writing-up process itself is a valuable reflective tool that empowers prospective teachers to become creators

and definers of their own learning. Similarly, van Manen (1997) supports the notion of writing to learn by suggesting that “Writing is closely fused into the research activity and reflection itself ... writing fixes thought on paper. It externalizes what in some sense is internal” (p. 125). The purpose of engaging prospective teachers in this type of inquiry process is to assist them to think reflectively, share and learn from their experiences and develop a long-term inquiry orientation toward their teaching. Involving teachers in researching their own lived experiences acknowledges that learning how to teach is a deeply personal activity that needs to accommodate prior beliefs in light of new personal discoveries (Barnett, 1991; Bobis, 1998; Wideen, et al. 1998).

Narrative as a Way of Knowing and Researching

This paper is presented as a *narrative inquiry*. Clandinin & Connelly (2000) suggested that *narrative inquiry* is both a methodology and phenomenon that pulls together a number of stories (about the phenomenon under study) into an interpretive account of experience. In this way, a narrative inquiry incorporates what Polkinghorne (1995) refers to as “narrative analysis” where the researcher configures a bounded system of data elements into a story or case study that “unites and gives meaning to the data” (p. 15). This process becomes a synthesis of the stories of experience into a coherent whole. The data sources for this inquiry consisted of: a case story written by one prospective teacher and my written responses to that case story; my reflective journal that I kept throughout the year-long inquiry; and workshop conversations within our community of practice. In essence, the narrative I have created parallels all aspects of the writing of a case story.

Using Case Investigations as a Learning Tool

Over the term of the inquiry, prospective teachers participated in two case investigations that reflected the principles of action research. During their first semester, prospective teachers focused on an assessment strategy or strategies in mathematics that they chose to explore and develop during their ten-week internship. This focus addressed the issue that very little attention has been given to preparing prospective teachers to use effective classroom assessment practices in their teaching of mathematics (Bright & Joyner, 1998). They were required to prepare a literature review and case proposal, gather evidence, document their process, analyse their findings and produce a written case story of their investigation which was to be shared within our community of practice for critiquing purposes. The first case investigation was completed over one semester (eighteen weeks including the ten-week school-based internship). However, to minimise the workload during the internship, the analysis and presentation of findings were completed after the internship.

The second case investigation, which will not be reported in this paper, was completed in the second semester (a thirteen week period). The prospective teachers were required to work with one student from a cooperating school during five one-hour sessions to assess and diagnose the student’s strengths and areas for development in mathematics. This setting provided an opportunity for prospective teachers to focus on particular aspects of their teaching so they could revisit and reframe the experiences they had on their internship. In both cases, prospective teachers were required to further develop their

reflective practice by writing a case story that documented the inquiry process, as well as their personal knowledge growth and changes to their personal theories of teaching and learning (LaBoskey, 1992; Smith, 2002).

Due to space restrictions, I have chosen to tell Molly's story and juxtapose it with my own responses to her writing of *one* case story. In this way, it resembles what Stake (2000) referred to as an "instrumental case study", which is chosen as an illustrative technique to advance the understanding of an external interest. This action then produced a narrative that described that interest, in this case the nature of learning in a community of practice where both teacher educator and prospective teachers worked together to explore their pedagogical practices through the writing of case stories. For this reason, Molly's story is not necessarily representative of all participants, but was chosen to illustrate some important issues that emerged. Where possible, Molly's voice has been used to enhance the narrative.

The Narrative Unfolds

As a mature-age student, Molly's personal stance towards teaching and learning had been shaped by her ten years as a nanny and child care worker prior to arriving at university. Molly's experiences have taught her the importance of developing "personal and positive relationships with students and having a good rapport with your class". She believes that learning occurs most effectively "if the class has direction, guidance, and the teacher is actively involved and interested in their learning". Molly used terms like "scaffolding", "problem-solving", and "open-ended tasks" to describe strategies she used to "help children help themselves, encourage discussion and help children develop their metacognitive skills". When Molly's thoughts are combined with her awareness of how "family values, surroundings, the learning environment and social situations" can affect learning, it could be said that her personal stance reflects the underlying principles of constructivist and socio-cultural perspectives of learning (Boaler, 2000; Wenger, 1998).

Writing the Case Proposal: Developing a Vision of Practice

Molly's case investigation proposal declared that "assessment is one area of teaching that I feel I lack stability and proficiency in". However, writing the proposal "had a positive effect on my outlook, as I have been provided with a heightened awareness through communicating ideas with lecturers, teachers and peers and also through valid research and reading". In Wenger's (1998) terms, the preparation of a case investigation proposal provided an opportunity to become part of a community of practice, in this case a community of inquirers or teacher researchers. Belonging to a community of practice meant that Molly had the opportunity to negotiate meaning through her case proposal and make sense of the nexus between teaching, assessing and learning mathematics. Such a supportive community provided an opportunity for creating conversations that allowed for the development of a clear vision of practice (Smith & Lowrie, 2001).

Using departmental documents, other relevant literature, and information gathered from visiting the school, Molly described her research goal as "exploring the use of student journal keeping as a self-assessment strategy and the use of observation grids to record student progress in mathematics". She commented at the end of her proposal that "the

most valuable part of my comprehension of assessment has been this proposal ... the writing down of ideas ... has helped me sort through all my information and material to construct logic and understanding". The writing process was clearly a productive and transformative one for Molly as it was for most of her peers. Her proposal reflected a clear vision of practice and there was a definite sense of direction and hope in her proposal. It is worth noting that prior to her ten-week internship, Molly had experienced three very successful practicums where "all my previous maths experiences had been wonderful—you could see the learning and feel the learning take place and hear the wonderful language used which demonstrated learning and understanding".

Reality Bites: A Blurring of the Vision of Practice

Molly and I had a number of phone conversations during her internship. The reality of the classroom had shaken her confidence and considerably blurred her vision of practice that she had developed in her proposal prior to her internship. Her school was in a small rural centre and the students were predominantly from low socio-economic, and diverse cultural backgrounds. The new principal at the school had placed a strong focus on discipline and behaviour management because they had not been a priority before she arrived! Molly's case story was written honestly, with a deep sense of critical awareness that reflected the realities of the classroom. She began her case story by saying that she could have made up a happy story, but she "did not have the energy left in me". Molly felt that, as her lecturer, I may be "very disappointed with the lack of data collected and the lack of information which is to follow".

Molly's case story told of "kids who did not care about school ... kids who did not care about learning ... kids who were not interested in the relevance that mathematics had to their lives and their future because they did not seem to care about their life and their future". Molly viewed her efforts to provide "exciting, motivating, hands-on, student-centred activities that would allow students to construct their own knowledge as a total waste of time". In Molly's classroom, "manipulating materials for many was no more than an exercise in developing gross and fine motor skills ... and I was sick of things being broken, used for weapons and stolen". Molly had persisted with this practice, along with group work and open-ended tasks, for three weeks "not because that was what worked, but because that is what we are told at uni works best in the classroom".

Silent Messages

Molly's case story provides a timely reminder to all teacher educators that no matter how implicitly it occurs, we send silent messages about our beliefs and values to the prospective teachers we work with. If we are not careful, as Molly's case story illustrates so cogently, these silent messages may be misinterpreted and may lead to the development of counter-intuitive pedagogical practices that do not develop or enhance the authority and ownership necessary to create "pedagogical power" (Cooney & Shealy, 1997). It is important to note that at no stage in our shared conversations did I consciously advocate group work, hands-on learning, and open-ended tasks as the *only* approach to the teaching and learning of mathematics. However, by virtue of omission, and perhaps through my passionate persuasions, I believe I inadvertently sent silent messages about what was the

“correct” or ideal way of doing things and that perhaps there was no other “acceptable” way of teaching and learning.

Unfortunately, the “tables seemed to turn” for Molly when she made the decision to “seek employment in some other career” after her internship. The remainder of the term was going to be conducted “just how I liked it” because there was no pressure to “worry about my case study”. As I read Molly’s reflections, I felt quite strong emotions about our learning relationship. At the end of her story I wrote that “your story has made me reflect on what we are doing here at university both explicitly and implicitly”. Similarly, after one of Molly’s phone calls, I contemplated in my journal about her apparent sense of failure and started to question if we could be setting students up for a feeling of failure because of our unwitting support of false dichotomies between transmissive and transformative learning.

How did Molly develop the notion that she had to measure up to other people’s ideals (such as “the university’s” or “the literature”) rather than her own, or feel compelled to make extreme choices between “her way” or “the uni way”? I came to the realisation that as teacher educators one of our prime responsibilities is to create opportunities for developing a sense of authority and ownership towards learning that will lead to a sense of personal empowerment, or “pedagogical power” (Cooney & Shealy, 1997, p. 105). In turn this would enhance the agency needed to make appropriate decisions relevant to contextual settings rather than adopting other people’s positions that are decontextualised. One of my suggestions to Molly was to “listen to your heart” when you feel that your strategies are not working in a particular context. The writing of personal theories (Smith, 2002) has been put forward as one way of achieving such an empowering disposition.

As a result of reading cases such as Molly’s, I now make sure that I include explicit conversations about “reading the play” and “being flexible” in responding to the classroom culture that exists within each school setting. I have developed a workshop that I named “What to do with page 22” so that I can proactively address some of the contextual constraints that may be faced in schools rather than ignoring the possibility of their existence because I may be philosophically opposed to them.

Resilience in Action

Molly’s case story went on to describe her turnaround in teaching and learning. One of the saddest features of the turnaround was Molly’s sense that she was still not meeting the expectations of the university, even though her story turned to one of resilience. She came in early one day and put the tables in rows. “The lessons were not hands-on”. Molly described one lesson where she demonstrated out the front of the classroom during a unit on volume. “I began by reading the Archimedes bath time book and then discussed the concept. Then we *decided together* on a suitable definition that I could write on the board and the class could write the same in their books. I then conducted an experiment out the front of the class by measuring the overflow collected after placing an object in the water (displacement). I drew a picture of the experiment on the board and asked the class to do the same in their books. I then invited the children to *write their own description* of the experiment”. Perhaps the most salient message for teacher educators is that Molly felt that

this scenario “could not be described as the ideal learning environment” and her case story still resonated with an essence of failure. What is an “ideal learning environment”?

I felt compelled to respond to Molly’s case story and wrote that the “ideal learning environment is any caring environment where learning actually occurs. It doesn’t matter what formation the desks are in or how ‘directed’ the lesson might seem. Student engagement is the key to successful learning”. Where is it written that students cannot be in rows to learn? Who made the rule that group work is the *only* way to go? How have we sent such silent messages to our prospective teachers so that they feel like failures when the seats are in rows and the lesson is more teacher-directed than student-centred? I would argue that the vignette describing Molly’s lesson on volume is a very productive way to begin learning about displacement, especially given the existing classroom culture. As I see it, her use of literature to introduce a mathematical concept, her descriptions of negotiating a definition for volume and displacement, and her strategy of inviting the children to write their own descriptions of the experiment reflect collaborative and constructive learning. At the end of her case story, Molly reflected that “writing this case story wasn’t a pleasant experience for me, but I have learnt a lot. This case investigation has allowed me to analyse forms of assessment and see how different things work for different people”.

Implications for Teacher Educators: Listening More and Telling Less

As teacher educators, we need to be critically reflective about the silent messages we may send to prospective teachers we interact with, and indirectly send to the cooperating teachers who work with them in school-based communities of practice. We need to take proactive steps to avoid an “us and them” mentality and seek a stronger nexus between academic and school communities of practice. Molly’s case story exemplifies resilience in action, but that resilience may have occurred despite my best intentions and not because of them! It seems clear that learning within communities of practice can be fostered or negated depending on how critically aware we are of the silent messages we send to each other, and the extent to which both school and academic communities resonate with each other. Molly’s case story illustrates how the writing process can provide an opportunity for teacher educators to “listen in” to the otherwise silent perceptions of prospective teachers.

The writing of a case story provided a vehicle to document the evolution of practices that highlighted Molly’s transformation of identity and personal growth. One of Molly’s peers characterised the writing of case stories as “a second chance at learning”. It would seem that to support a second chance at learning, teacher educators need to listen more to the generative stories of prospective teachers and tell less about “ideal” visions of practice. Similarly, Molly had to learn to listen to her students and her own voice to decide what was most appropriate for the learning needs of the students in her care instead of only hearing what the university and the literature were “telling” her (no matter how silently or implicitly). Teacher educators need to be critically aware of how their beliefs and values may be interpreted in multiple ways by prospective teachers and how one community of practice can complement or contradict another.

One of the most compelling constraints on teaching and learning that is rarely addressed in the literature related to disciplines is how students behave in response to planned learning opportunities. Molly’s description of her students’ reaction to group work and

hands-on learning highlights the fact that prospective teachers are learning in diverse communities of practice that do not always follow ideal or predictable patterns. Such a realisation provides a timely reminder to all teacher educators that our pedagogical practices need to explicitly address the contextual constraints that may be experienced by prospective teachers.

Participation in communities of practice, where case investigations (teacher research) and the subsequent writing of case stories play a major role, can openly address the early and continued reflection of mathematical beliefs, practices, contextual constraints and dilemmas experienced by prospective teachers. Moreover, participation in reflective writing about lived experiences can provide opportunities for identity formation and transformation that are essential aspects of becoming a teacher of mathematics. Perhaps the reading of this narrative will encourage other teacher educators to plan for learning opportunities within communities of practice that allow for listening more and telling less.

Practical Implications: The Narrative Continues

The pragmatic nature of an approach to teacher education where we try to listen more and tell less can be explored further by looking more closely at some of the implications mentioned earlier and beginning a conversation about what might be done to address such implications. How do we become critically aware of the silent messages we might be sending our prospective teachers? What will help us to avoid an “us and them” mentality? In what ways can we enhance the resilience of our prospective teachers and the transition from one community of practice to another? Answers to these questions could arguably be quite different, depending on contextual setting and the nature of the learners within those settings. What I hope to do in these last two pages is open the door wider on conversations about practices that unfold possibilities for listening more and telling less. To open the door wider, I will take a further look through the theoretical window of Wenger’s (1998) communities of practice and elaborate with examples from my own reflective writing.

Becoming Critically Aware of Silent Messages

A closer look at Wenger’s (1998) writing about communities of practice appears to provide some guidance. His claim that “teaching does not cause learning: what ends up being learned may or may not be what was taught” (p. 267) clearly reminds us of the strong relationship between *asking* and *knowing*. Although somewhat simplistic, *asking* creates opportunities for listening. For example, if we ask prospective teachers to tell us what they are hearing from our lectures and workshops, we provide a framework for “listening in” to their ways of knowing. One strategy for “listening in” is to ask prospective teachers to write a letter to a teacher they know explaining, for example, what “open-ended tasks” are. Also, asking them to include examples of their own experiences to support their letter and things they might like to warn teachers about can be an enlightening experience for teacher educators and an opportunity to focus further learning.

Wenger (1998) refers to processes such as letter writing as the “reification” of knowledge, an important process within communities of practice because it focuses on the negotiation of meaning. By reading the letters to teachers, teacher educators can hear back the interpretive echoes that prospective teachers send. This form of reflective writing also

reinforces that we are not searching for the “right” answers or approach. Instead we are offering opportunities for teachers to author their own learning, and call on their own experiences, to enhance the development of a sense of “pedagogical power” (Cooney & Shealy, 1997). In this way, our somewhat silent messages can resonate back through the words of prospective teachers so that we can critically examine the conversations they have created.

Avoiding an “Us and Them” Mentality

Wenger (1998) cautioned that if we create too strong a focus on local practices, “school learning is just learning school”. The same can be said for university-based learning. If our community of practice is too localised then university learning is just learning university. A clear message from the reading of Wenger (1998) is that, as educators we cannot focus solely on information (telling). We must focus our attention on planning opportunities for the transformation of identities where “identity involves choosing what to know and becoming a person for whom such knowledge is meaningful”. Creating opportunities for concomitant learning within school-based communities and university-based communities is one strategy for avoiding an “us and them” mentality and for enhancing opportunities for identity transformation.

One way of achieving a concomitant learning relationship is by fostering an *ongoing transition* between communities of practice. The second case investigation that was described earlier in this paper provided a framework for achieving such an ongoing transition. Using a cyclic model of practice/reflection/theory, prospective teachers were required to work in a micro-teaching environment with one student from a cooperating school during five one-hour sessions to assess and diagnose the student’s strengths and areas for development in mathematics. After each visit, prospective teachers were asked to share their experiences in university workshop settings, and revisit syllabus documents and other relevant literature to plan experiences that would generate further learning. As the visits progressed, prospective teachers were able to align their university-based learning within a broader school-based community of practice. Once again, Wenger (1998) supports this practice by emphasising the importance of reconciling, or aligning one’s practices with the “styles and discourses of the constellations” (p. 274) that one expects to practice in.

Enhancing Resilience

The complex and unpredictable nature of teaching requires the development of a resilient disposition. Molly’s resilience surfaced as she made a decision to teach “just how I like it” without worrying about what the university thought. In other words, once Molly felt a sense of authority over her own decision-making processes, she felt empowered to walk her own teaching path rather than the one laid down by others. In Wenger’s (1998) terms, as educators we need to seek a synergy between “designing” learning and allowing learning to “emerge” in order to foster the creation of an identity as a valued member of a learning community.

The pedagogical practices outlined in this paper, that is, using case investigations, case stories, and letters of explanation can all be conceptualised as processes of “writing to learn” (Zinsser, 1988). A major premise of “writing to learn” is that we write to find out

what we know and what we want to say. Writing provides an opportunity for reasoning your way through sequential steps towards making meaning of our experiences. The product of that writing then becomes a means for shared conversations that can lead to the negotiation of meaning. It could be argued that opportunities for focused and reflective writing not only provide a vehicle for the emergence of learning, they also enhance identity formation and transformation. Moreover, the learning that is uncovered is just as enlightening for teacher educators as it is for prospective teachers.

A synergy between designed and emergent learning translates into a balance between telling and listening. Such a synergy allows contextual constraints and other teaching dilemmas to emerge within supportive communities of practice *before* prospective teachers become beginning teachers. However, a vital aspect of such an inquiry-based approach appears to be the inclusion of opportunities to write critically and reflectively about experiences so they can be made public, shared and critiqued in supportive communities of practice. In turn, ownership of the writing process appears to occasion learning in generative ways that enhance the agency, identity, and resilience of prospective teachers.

References

- Barnett, C. S. (1991). Building a case-based curriculum to enhance the pedagogical content knowledge of mathematics teachers. *Journal of Teacher Education*, 42(4), 263–272.
- Boaler, J. (Ed.) (2000). *Multiple perspectives on mathematics teaching and learning*. Westport, CT: Ablex.
- Bobis, J. (1998). Partnerships with practising teachers: Action research in practice. In N. Ellerton (Ed.), *Issues in mathematics education: A contemporary perspective* (pp. 18–40). Perth, WA: Mathematics, Science and Technology Education Centre, Edith Cowan University.
- Bright, G. W., & Joyner, J. M. (Eds.) (1998). *Classroom assessment in mathematics: Views from a National Science Foundation working conference*. Lanham, MD: University Press of America.
- Cochran-Smith, M., & Lytle, S. L. (1999). The teacher research movement: A decade later. *Educational Researcher*, 28(7), 15–25.
- Cole, A. L., & Knowles, J. G. (1996). *The politics of epistemology and the self-study of teachers' education practices*. Paper presented at the International Conference, Self-Study in Teacher Education: Empowering Our Future held at Herstmonceux Castle, East Sussex, England.
- Cooney, T. J., & Shealy, B. E. (1997). On understanding the structure of teachers' beliefs and their relationship to change. In E. Fennema & B. Scott Nelson (Eds.), *Mathematics teachers in transition*, (pp. 87–110). Mahwah, NJ: Lawrence Erlbaum.
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.
- Gore, J. M., & Zeichner, K. M. (1991). Action research and reflective teaching in prospective teacher education: A case study from the United States. *Teaching and Teacher Education*, 7(2), 119–136.
- Hamilton, M. L., & Pinnegar, S. (2000). On the threshold of a new century: Trustworthiness, integrity and self-study in teacher education. *Journal of Teacher Education*, 51(3), 234–240.
- Hunter, J., & Hatton, N. (1998). Approaches to the writing of cases: Experiences with prospective Master of Teaching students. *Asia-Pacific Journal of Teacher Education*, 26(3), 235–245.
- Kemmis, S., & McTaggart, R. (1988). *The action research planner*. Geelong, Vic: Deakin University Press.
- LaBoskey, V. K. (1992). Case investigations: Prospective teacher research as an aid to reflection. In J. H. Shulman (Ed.) *Case methods in teacher education* (pp. 175–193). New York, NY: Teachers College Press.
- Loughran, J., & Russell, T. (Eds.) (2002). *Improving teacher education practices through self-study*. New York, NY: Routledge Falmer.
- Mason, J. (1998). Researching from the inside in mathematics education. In A. Sierpiska & J. Kilpatrick (Eds.), *Mathematics education as a research domain: A search for identity (Book 2)*. Dordrecht, Netherlands: Kluwer.
- Richert, A. E. (1992). The content of student teachers' reflections within different structures for facilitating the reflective process. In T. Russell & H. Munby (Eds.), *Teachers and teaching: From classrooms to reflection*. London: Falmer.

- Smith, T. J., & Lowrie, T. J. (2001). Visions of practice: Getting the balance right. In J. Bobis, B. Perry, & M. Mitchelmore (Eds.), *Numeracy and beyond*, Proceedings of the 24th Annual Conference of the Mathematics Education Research Group of Australasia (pp. 27–34). Sydney, NSW: MERGA.
- Smith, T. J. (2002). Positioning the personal in mathematics teacher education through pedagogical conversations. In B. Barton, K. Irwin, M. Pfannkuch, & M. Thomas (Eds.), *Mathematics education in the South Pacific*, Proceedings of the 25th Annual Conference of the Mathematics Education Research Group of Australasia (pp. 625–632). Auckland, NZ: MERGA.
- Stake, R. E. (2000). Case studies. In N.K. Denzin & Y.S. Lincoln (Eds.). *Handbook of Qualitative Research* (pp. 435–454). Thousand Oaks, CA: Sage.
- van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy*. Cobourg, ON: Althouse.
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge, UK: Cambridge University Press.
- Wideen, M., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research*, 68(2), 130–178.
- Zinsser, W. (1988). *Writing to learn: How to write and think clearly about any subject at all*. New York, NY: Harper & Row.