PROFESSIONAL PRACTICE DOCTORAL STUDIES: CREATING CONDITIONS FOR TRANSFORMATIVE LEARNING

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ABSTRACT:

Otago Polytechnic's Capable NZ is launching its Doctorate in Professional Practice (DPP) in November 2017, building on its track record of supporting innovative work-based learning. Doctoral programmes in New Zealand have mostly been offered in university settings to date, with their own particular approaches to teaching and learning. This new professional practice doctoral programme offers an opportunity to revisit what teaching and learning approaches will best support learners' leadership in their professions and generate relevant new knowledge for New Zealand's workplaces in a complex, changing world.

This article argues for attention to three key conditions that support the transformative potential of DPP learning to meaningfully respond to the complexity of the world that learners are working in: a solid praxis ground for the learner, intentionally structured collaborative inquiry and exposure to transdisciplinary perspectives that challenge assumed wisdom. These three conditions in turn challenge academic decision-makers and mentors, not just learners, to be open to questioning their own assumed wisdom and adapting their practices. The article draws on the doctorate findings of the author, a Capable NZ team member, and her experience as a learner studying for a professional practice-based doctorate.

INTRODUCTION:

Otago Polytechnic is launching its Doctorate in Professional Practice (DPP) in November 2017. A robust 'container' for doctorate learning needs rigour to support its credibility, and flexibility to sustain an innovative edge. Otago Polytechnic has brought its own insider wisdom from two decades' work in transformative work-based learning to shape the DPP. This article brings an outsider perspective from someone recently joining the Capable NZ team who has completed a professional practice-based PhD within a university setting (Auckland University of Technology). The article draws on the PhD findings about conditions supporting leadership learning and the author's experiences as a doctorate student to deepen understanding of factors that can enhance potential for transformative doctorate learning.

The DPP, and more broadly Capable NZ's educational approach, is a response to the complexity of the world that learners are working in. The learner is immersed in the reality they are researching. The complex situation they are researching, their own sense of inner knowing and the new knowledge emerging is always in movement. Complexity thinking embraces transdisciplinary perspectives to support understanding of complex, evolving, dynamic and interconnected systems, and offers a paradigm to help make sense of our world and our work amidst much uncertainty and ambiguity (Goldstein, 2008). Complex adaptive systems are systems that learn (Johnson, 2001). So when working amidst complexity, a learning and adaptation orientation is central for the whole system, not just for students. Our own reflective practice as learning facilitators, academic mentors and leaders of educational institutions is essential to inform a grounded international re-thinking of what education for complex times looks

like (Davis, Sumara, & Luce-Kapler, 2008).

This article argues that three key conditions support the potential for transformative DPP learning: a solid praxis ground for the learner, intentionally structured collaborative inquiry and exposure to transdisciplinary perspectives that challenge assumed wisdom. Praxis-related research assumes the learner has a specific focus on supporting the development of new knowledge to inform not only their own committed action as an individual professional but also at some wider societal level (Mattson & Kemmis, 2007), whether that be in their workplace, community, iwi, hapūor whānau setting. Collaborative inquiry provides a means of co-constructing knowledge with others immersed in the research context, which extends the whole group's capability to notice, reflect, inquire and make sense of their context, their practice and their collective wisdom as it is emerging. Transdisciplinary research enables often incommensurable frames of reference to collide, diverge and support the emergence of new knowing. This learning and research approach is very different from traditional doctoral study which is usually framed around one primary disciplinary lens or field, with one primary researcher as the interpreter of the data collected from participants.

The article first identifies the research methods and relevant findings from the author's PhD which identified conditions supporting leadership learning for civil society practitioners. A particular understanding of leadership as a living learning system that emerged from the thesis is then used as a way of discussing evidence from the author's experience of the PhD research process. Key polarities are identified that need attention for any learner to be alive to their own capacity and to keep moving forward amidst the complexities of the process of generating new knowledge. Finally, the paper elaborates on the three conditions for learning that can enable a self-motivated learner's inherent potential for transformational learning – at a personal level, as a professional and as a contributor of new knowledge to a wider sphere of practice.

PRAXIS-RELATED, PRACTITIONER ACTION RESEARCH METHODS

I located my research within the broad field of action research (Carson & Sumara, 1997; Reason & Bradbury, 2008) and practitioner research in particular (Goodfellow & Hedges, 2007) which focuses on practitioners initiating research within their area of practice in order to theorise and improve practice. Praxis-related research grounds learning in live powerful work-based questions for the practitioner that they are motivated to influence in an ethical, informed, creative manner (Mattson & Kemmis, 2007). Development evaluation (Patton, 2011), cooperative inquiry (Heron, 1996) and appreciative inquiry (Cooperrider & Whitney, 2005) research methods were used to create a strong focus on generating knowledge with practitioners. We were applying action research methods to an everyday living practice (Carson & Sumara, 1997) of facilitating inquiry within ourselves and with others. We drew tacit wisdom from our own professional practice experience, to inform praxis and theory-building outcomes.

Action research enabled attention to two leadership learning interventions as they were evolving through significant periods of change. The research process itself co-evolved in response to what we as co-researchers were learning and the new questions that emerged. The coherence of the research was grounded in an understanding that reality is created and explained as we interact with our context

Two action research studies explored the research question 'What supports the emergence of civil society leadership?' with two different Aotearoa New Zealand leadership learning initiatives. Each initiative aimed to create conditions for the emergence of skills, knowledge and identities as active citizens. These active citizens were in turn shaping responses to pressing social, economic and environmental issues.

One research site was an academic leadership development program for civil society organisation managers and leaders (Unitec NZ's Graduate Diploma in Not for Profit Management). In-depth, semi-structured appreciative inquiry interviews with six graduates and a literature review informed teaching team deliberations in 2009 around the redesign of this programme. As a Unitec teaching team member at that time, I was an insider researcher.

The other research site was a national leadership team (Inspiring Communities), supporting intentional learning connections between different civil society actors involved in diverse place-based community-led development initiatives. Five co-researchers used reflective journals and five collaborative inquiry workshops across 2011 to support intentional observation and knowledge generation about what was supporting (or not) our own and others' leadership within community initiatives. I started as an outsider researcher, but the collaborative nature of this research process increasingly shaped my insider co-researcher role and my involvement in Inspiring Communities' projects.

The leadership framework presented here (Malcolm, 2014) emerged out of a bricolage process (Denzin & Lincoln, 2000), in which I analysed patterns between the parts and the whole of the two action research studies using a complexity thinking interpretative lens. Data analysis was both collaborative and individual, systematic and emergent, rapid and slow, in the different stages of the process. The writing process itself was a significant method (van Manen, 1997) supporting the stitching together and emergence of new knowing. Together, these different methods shaped a research strategy for knowledge generation.

Integrity of the research strategy was supported by triangulation of data, investigators, theories and methodologies, while also acknowledging that the findings are a reflection of complex, living process that can never be fully captured (Denzin, 2010). Data triangulation occurred between and within the two action research cycles by independently studying leadership development with different people, at different times and places. Investigator triangulation was achieved through the collaborative nature of these inquiries, engaging participants as co-researchers in design, data gathering and analysis, to facilitate diverse interpretations of the data. Theory triangulation was supported by complexity thinking's transdisciplinary learning orientation (Davis & Sumara, 2006), which enabled data to be analysed from multiple theoretical perspectives, with multiple hypotheses in mind. Methodological triangulation was achieved by analysing a mix of semi-structured interviews, journals and group conversation data in different action research cycles. Collaborative inquiry research is further validated through its data and sense- making being grounded in practitioner experience and the relevance of the knowledge generated for our own and others' practice.

FINDINGS: LEADERSHIP AS LEARNING FRAMEWORK

The findings pointed towards understanding leadership as an ongoing interactive learning dynamic. Leadership is like working in a living, moving sea with tides always in movement. The sea is unpredictable, so we need to keep learning to read its movements, decide whether and how to ride its waves, adapting our responses to work with the ongoing movement and polarities of the tides.

Lederach, Neufeld, and Culbertson (2007)'s four quadrants of change framework supported understanding of some of the inter-related layers of this leadership sea. These authors argue that transformational change in communities is dependent on concurrent movement in four key areas: personal, relational, structural and cultural:

- · Personal attitudes, behaviours, actions and values sets of individuals
- Relational connections, ties, trust between people and organisations
- Structures, systems, formal 'rules' that govern communities, families, organisations, government and society as a whole
- The culture of a community as the unwritten rules of the game the way we do things around here (Inspiring Communities, 2013, p. 29)

The Leadership as Learning framework (Table 1) identifies some of the typical patterns of leadership responses identified from the research, within these four inter-related, moving layers. Constructive responses are presented as

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Table 1 . The Leadership as Learning framework

polarities, tides always in movement. Sometimes what were once constructive leadership responses get taken to an extreme and become destructive, tipping into their shadow sides, like waves that dump us. These shadow sides are described in the outer columns. In the middle column, qualities, competencies and approaches are identified as resources which the research participants drew on when leading in complex situations to anchor their practice.

This article goes on to discuss how these research findings can inform the design of effective leadership learning environments, including the DPP. In the next section, my experience as a doctorate learner is discussed, applying the Leadership as Learning framework to help make sense of the polarities and tensions which supported my own reflective practice and the emergence of new knowledge.

Applying these understandings to the design of the DPP learning "container"

A complexity leadership perspective shifts the focus of leadership from the individual leader's qualities, competencies or style towards a focus on leadership as the collective learning and adaptation work of the whole system. Leadership focuses on creating conditions that facilitate the inherent capacity of complex systems to learn, self-organise, adapt and innovate. 'Learners' within this perspective are not only individuals, but can also be groups, communities, organisations, bodies of knowledge, languages, cultures, and even species. Learners act as open systems with porous boundaries to exchange information and energy with their environments which in turn impacts changes in their own structures and those environments (Davis & Sumara, 2006).

For the purposes of this article, conditions that facilitate learning within the DPP are discussed with at least four learners/learning relationships in mind – the individual learner, relationships with and within the supervisor(s)/ facilitators/mentors team, the practitioner's practice world environment and the educational institution processes. These are all layers of interacting nested systems which are interdependent parts of a wider, dynamic whole.

The Personal Layer: My own self-motivation was an essential foundation for getting started and sustaining momentum with the doctorate study. The "who am I and why do I want to do this study?" exercise that my supervisor gave me at the outset was a real touchstone. The exercise (a condensed form of Capable NZ's processes) clarified my motivation, which was to make sense of and enhance a lifetime's work in the civil society space as an active citizen. Self-motivated study disciplines helped me carve out a way forward, mapping one piece of the journey at a time. I set the agenda for monthly supervision conversations, as I searched for and inquired into my deeper research questions. There were new skills to learn, especially about academic writing styles, finding my own authoritative voice and building a cohesive argument. Exploring different theories of knowledge opened up new ways of seeing the world and helped make sense of my lived experience and research data.

Complexity thinking, Goethean inquiry approaches (Kaplan, 2002) and developmental evaluation were deeply influential in the research outcomes and process. They shaped and added rigour to the research methods and ethical principles applied throughout the research. They helped me articulate my framework of practice and world view in particular language and deepened my seeing and sense-making abilities working the complex phenomena. The underlying understanding of complex, living systems being always in movement, helped me ride the inevitable personal tides between my strong self and my vulnerable self during the study. The strong/vulnerable polarity identified in Table I is a key polarity identified from the research which runs counter to traditional leadership discourse which portrays leadership as more strong than vulnerable. The shadow sides of this polarity, especially being paralysed by self-doubt, were certainly there at times for me. Curiosity, reflective practice, letting go control and mentoring from my supervisors were some of the resources identified in the middle box of Table I that helped grow my ability to live with uncertainty and to keep the tides between strong and vulnerable in more healthy than destructive movement.

The Relational layer: My relationships with my two supervisors had a pivotal impact on my motivation to complete. I embarked on PhD study with a dynamic mix of real curiosity for new learning and deep fear about my capability to complete. That polarity between curiosity and fear stayed in ongoing tidal movement throughout the six year journey from MPhil enrolment to PhD graduation. My supervisors played a pivotal role in 'holding' me through that journey, believing in me when I had lost faith in my capabilities, inspiring me with new perspectives and possibilities, starting from where I was at, stretching me beyond my comfort zone at times, but always being there reliably alongside. They gently engaged with my exploration of collaborative inquiry, complexity thinking and academic writing. They respected my own knowledge from 40 years' experience in diverse civil society roles. They pointed me towards research methodologies and knowledge systems that helped me to name and frame my intuitive inquiry approach with academic rigour.

Two key polarities in the relational layer of the "Leadership as Learning" framework (Table I) were particularly relevant to the supervisor relationship. I was moving between listening to the many voices of my co-researchers and also needing to find my own authoritative voice in the final thesis writing - taking care to avoid the risk of 'group think'. The supervisors moved between leading out front (teacher-led), us leading together and leading from behind (student-led). The extreme of teacher-led was the strong advocacy of my primary supervisor to challenge the academic committee's initial rejection of my PhD proposal. My proposal presented a challenge to an academic world that was not used to transdisciplinary, collaborative research, let alone a complexity thinking approach to emergent new knowledge. The committee were concerned my proposal was too big and unwieldy and pressed for the exclusion of some of the theoretical and methodological approaches I was exploring. My supervisor's message was clear:"I will defend to my death your right to ask those questions but not your right to answer them. Margy-lean will answer them herself over the course of her PhD journey." My supervisor's successful advocacy on my behalf was a challenge to myself to 'just do it', in a thoughtful way and make sure I convinced the examiners four years later that I could address their concerns. I needed to demonstrate the importance of transdisciplinary thinking and how engagement with a variety of theoretical and methodological approaches was a useful resource, not a problem to be resolved through imposition of one worldview. I needed to find ways to honour both the ethics of collaborative inquiry and how to bring my own authoritative voice to the thesis.

The Cultural Layer: I bring a strong values commitment to participatory research undertaken 'with' communities, whether I am an insider or an outsider researcher. My experience of the doctorate research stretched my thinking around how far collaboration could extend into co-design of the core research question, collaborative processes of data analysis and interpretation, and shared use of the research findings for different publication purposes. Both action research cycles were collaborative, but the second one took collaboration culture to a new level in my experience. In the first research cycle, my colleagues were more research participants and users of the data gathered, to inform our collective work on academic programme redesign. In the second research cycle, collaborative inquiry began with defining a 'working together agreement' and agreeing on our underlying framing of the research. We became co-researchers and co-participants in gathering and analysing data and publishing findings for wider practitioner and academic audiences' use. Power over key decisions and ownership of the knowledge generated was shared in both cycles, but in quite different ways.

The power of collaborative inquiry goes beyond simply being a respectful, ethical research approach. Collaborative inquiry provides disciplines for observing, interpreting and theorising around practice. Immersion in the whole system is necessary in order to see and sense these patterns, in both the present moments and the bigger picture over time. By being so immersed, the very act of noticing fosters the potential for the emergence of new learning. In creating a collective space for making sense of our practice, collaborative inquiry supported a strengthened collective culture of reflective practice and demonstrated a strategy for enhancing the leadership of everyone involved. Knowledge was being socially constructed by the group, grounded in participants' practice reality and shared in a way that new understandings were able to be both tested and applied in the true sense of the concept of praxis (Heron, 1996). At its best, collaborative inquiry research can strengthen learning organisation culture, leadership development of all co-researchers, and a particular multisensory awareness for seeing the bigger picture, spotting where the energy is and framing shared understanding of how to move forward.

The Structural Layer: The construct of a PhD as an individual research contribution to new knowledge represents

a particular challenge when working with collaborative inquiry approaches. What Davis and Sumara (2006) describe as the collective emergence of a group's body of knowledge cannot be solely attributed to any individual locus of learning. The thesis drew on the voice and insights from those who engaged in both research cycles, my own reflective practice and the rich literature of complexity thinking, civil society leadership and leadership learning to communicate findings. There was frequent use of "we" in the thesis to honour the collective wisdom of my corresearchers, not just my own contribution.

Right from the outset there were polarities to manage between educational systems' expectations of structured plans and the emergent nature of the inquiry processes. The academic institution held the ultimate power to approve or decline my research proposal and ethics application, even though the partnership agreement developed with research co-participants had so clearly defined mutually agreed terms of engagement. Thankfully, the ethics committee approved of our detailed work around 'how' we would work together, which gave us some flexibility around 'what' emerged during the research process.

A particularly helpful support structure was a regular pot luck dinner convened by my primary supervisor as a collaborative peer learning laboratory for all her students. It created a 'loose' container with a 'tight' discipline of regular meeting and shared learning between students (past and present), supervisors and other resource people all passionately committed to postgraduate learning. Unfortunately I was not able to attend often as a distant student but I still felt the strength of this potluck learning community – especially as an environment for rehearsing my oral examination. The ''potluck'' was a great example of a supervisor's role in creating the conditions for self-organising peer to peer learning systems that are central to how complex adaptive systems thrive. Teachers, like any leaders, can play an important role in creating conditions for learning, which challenges the expert/novice power dynamic and frees up potential for everyone to exercise leadership as learners facing complex times in their work, home and community environments.

Overall, the tension with the education structures in my experience was more around the academic committee's difficulty coping with the transdisciplinary complexity thinking lens than the ethics committee's ability to accept collaborative inquiry. My experience points to an over-riding emphasis on creating conditions for learning being more constructive than any undue control over how students frame their inquiries.

DISCUSSION

As an Otago Polytechnic Learning Facilitator, I am deeply interested in how best to foster conditions for learning that enable students to reflect on their experience, extend their learning and leadership development as active citizens, and contribute to society from whatever their roles . As a student engaged in writing a doctorate thesis where data is gathered and analysed collaboratively, I explored questions about how new knowledge emerges and puzzled over how to foster and describe this kind of emergence with others.

Complexity thinking is a philosophical and pragmatic way of thinking and acting (Davis & Sumara, 2006) which I have embraced as a particular understanding of the diverse nature of reality, the diverse ways that we interpret it and how knowledge is continually co-constructed through the interaction of multiple ontologies. Variation is seen as a resource, not a problem to be resolved through imposition of one worldview. It is in this sense that complexity thinking represents a paradigm shift from assumptions that coherent research must be framed through use of a single paradigm (e.g. positivism, interpretivism, critical theory, post-structuralism). Without imposing complexity thinking on any particular students, I see this philosophical approach as useful for the DPP in ensuring students have creative space to explore diverse ways of seeing and sense-making, thinking and acting as we foster the emergence of new knowledge.

Researchers are traditionally encouraged to use tightly defined research paradigms, questions and methods to foster learning, just as teachers have been encouraged to define clear graduate competency profiles and curriculum

frameworks to foster learning. These learning approaches put an emphasis on particular framing and content to support learning. The problem is that in dynamic, diverse, complex contexts, our questions change, our methods have to adapt, and new capabilities and knowledge need to grow in response to what is rapidly emerging. Content can become quickly out-dated. Single research paradigms may not provide diverse enough insights to make sense of a complex situation.

My doctoral research highlighted the importance of attention to process-oriented interactions to foster learning amidst complexity. These interactions need to support ongoing inquiry about what is unfolding and critique of content for its relevance. Leadership learning in both action research contexts emerged as much, if not more, from the process of how researchers, teachers and civil society leaders enabled collaborative inquiry relationships, as from any content focus on what was being researched, taught or initiated.

In analysing the process of this research and its findings, a pattern emerged of a learning dynamic around three core interactions: with peer learners, with new thinking, and with practice contexts. This dynamic was supporting my individual learning as researcher, enabling collaborative research processes and encouraging leadership learning for others. When we understand this pattern, in whatever our role, we can be more intentional in noticing what conditions might need adjustment, to maximize any system's capacity for learning at any point in time.

The first element of this learning dynamic is the building of collaborative research relationships as peer learners with our research context partners. Peer learners need to clarify what kind of partnership is intended. Power dynamics can shift when peer learners inquire together, rather than acting as teachers, researchers or leaders with assumed power and expertise over others. The distributed intelligence of a whole peer learning group can be accessed and support decentralised leadership. Learning can be enhanced when collaborative relationships are mirrored across every level of a learning system, not just with the immediately apparent 'learners'. However, facilitators of collaborative inquiry learning have to manage some paradoxes when working as both co-researchers and co-participants in peer learning relationships. Facilitators need to offer some of the critical distance of an outsider and have some of the in-depth context knowledge of an insider. They need to honour their own voice as a participant and facilitate everyone else's voices to be heard.

The second element of this learning dynamic requires stretching thinking and experience beyond the known. A culture of curiosity and openness towards the known and the unknown can be supported by collaborative inquiry relationships. There is a role for teachers, researchers and leaders in creating disturbance around established assumptions, worldviews, theories, identities and habits of practice. However, as facilitators of learning, there are paradoxes to manage around creating a safe enough environment and at the same time stretching people's thinking and experience to foster higher-level learning. Fear and resistance can block higher-level learning if there is not an established culture of trust. There are also tensions around how much to challenge assumptions and expose inquiry to new outside perspectives when trying to honour and enable a group's own wisdom to emerge from reflecting on their own practice.

The third element of this learning dynamic is grounding in practice context, values and outcomes. Any learning is highly contextual. Different learning processes support reflection on practice experience to inform future praxis outcomes. The developmental process of inquiry throughout this doctoral research was anchored in clear shared values and intent about social change outcomes. Yet it was essential that inquiry questions and outcomes were not too narrowly defined to enable emergent learning beyond what was initially anticipated. There was a necessary paradox between loose and tight structures to support on-going cycles of intentional reflective practice. Structured processes, skills and commitment were needed, individually and collectively: for noticing, questioning, dialogue, sense-making and application of learning. Yet our processes also needed to keep adapting to context constraints and opportunities as the inquiry progressed.

CONCLUDING REFLECTIONS:

My doctoral study showed how leadership as learning can be supported through collaborative inquiry as a means of co-constructing knowledge and action, as a whole group extends their capability to notice, reflect, inquire and make sense of their context, their practice and their collective wisdom as it is emerging. The flexible structure of the DPP should be able to support students if they choose collaborative inquiry approaches within their professional practice research contexts. This option can deepen the learning and praxis ripple effects of any one student's study to their wider work context, while at the same time enhancing the context relevance and triangulation of their findings.

The DPP offers an opportunity for encouraging deep professional practice learning and leadership development not only for individual students, but for the organisations, professions or other work contexts within which students choose to locate their study. Praxis-related practitioner action research aligns well with a complexity thinking's approach in its focus on supporting the capacity of any system for its own ongoing learning and adaptation. Doctorate study offers a powerful opportunity for leadership formation, through structuring reflection, harvesting implicit knowledge, growing sense-making skills, articulating and deepening application of new professional practice wisdom.

It is highly likely that the DPP development will trigger learning challenges for Capable NZ, Otago Polytechnic and the wider tertiary education sector too, as structures, systems and cultural habits of how things are done need to be revisited to respond to the complex world our students are researching and working in. Whether teachers, learners or the systems we work within, from a complexity thinking perspective, we are all learners who will need to keep adapting what education, ethics approvals, transdisciplinary research paradigms and acceptable methodologies look like for complex, ever changing times. The vision, mission, values and culture of Otago Polytechnic provide a sound basis to embrace those challenges as the DPP develops its unique contribution to professional practice knowledge informing innovative change.

Margy-Jean Malcolm's teaching, research, voluntary and consultancy work is informed by a lifetime involvement in community development, from local neighbourhood work to central government policy. Previously a Senior Lecturer on Unitec NZ's former Graduate Diploma in Not for Profit Management. Margy-Jean's PhD study enabled her 'Leadership as Learning' practice framework to emerge from collaborative action research and her own reflective practice. The framework fosters deeper understanding of how to work with complexity and grow the leadership of everyone as active citizens. Mary-Jean is a facilitator for CAPABLE NZ.

REFERENCES

Carson, T., R., & Sumara, D. (1997). Action research as living practice. New York, NY: Peter Lang.

- Cooperrider, D. L., & Whitney, D. (2005). Appreciative Enquiry: A positive revolution in change. San Franscisco, CA: Berrett-Koehler.
- Davis, B., & Sumara, D. (2006). Complexity and education: Inquiries into learning, teaching and research. Mahwah, NJ: Lawrence Erlbaum Associates.
- Davis, B., Sumara, D., & Luce-Kapler, R. (2008). Engaging minds: Changing teaching in complex times. New York, NY: Routledge.
- Denzin, N. K. (2010). Moments, Mixed Methods, and Paradigm Dialogs. *Qualitative Inquiry*, 16(6), 419-427. doi:10.1177/1077800410364608
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2000). The handbook of qualitative research (2nd ed.). London, England: Sage
- Goldstein, J.A. (Ed.) (2008). Conceptual foundations of complexity science: Development and main constructs. Charlotte, NC: Information Age Publishing Inc.
- Goodfellow, J., & Hedges, H. (2007). Practitioner research 'centre stage': Contexts, contribution and challenges. In L. Keesing-Styles & H. Hedges (Eds.), Theorising early childhood practice:emerging dialogues. Castle Hill, Australia: Pademelon Press.
- Heron, J. (1996). Cooperative inquiry: Research into the human condition. London, England: Sage.
- Inspiring Communities. (2013). Learning by Doing: community-led change in Aotearoa NZ. Wellington, New Zealand Inspiring Communities Trust.
- Johnson, S. (2001). Emergence. London, England: Penguin.
- Kaplan, A. (2002). Development practitioners and social process: Artists of the invisible. London, England: Pluto Press.
- Lederach, J. P., Neufeld, R., & Culbertson, H. (2007). Reflective peacebuilding: A planning, monitoring and learning toolkit. Notre Dame, IN: The Joan Kroc Institute for International Peace Studies.
- Malcolm, M. J. (2014). Civil Society Leadership as Learning. (PhD), Auckland University of Technology, Auckland. Retrieved from http://aut.researchgateway.ac.nz/handle/10292/7212
- Mattson, M., & Kemmis, S. (2007). Praxis-related research: serving two masters. *Pedagogy, Culture and Society*, 15(2), 185-214. Retrieved from doi:10.1080/14681360701403706
- Patton, M. Q. (2011). Developmental evaluation: Applying complexity concepts to enhance innovation and use. New York; NY: Guildford Press.
- Reason, P., & Bradbury, H. (Eds.). (2008). The SAGE handbook of action research: Participative inquiry and practice. London, England: Sage.
- van Manen, M. (1997). Researching Ilved experience: Human science for an action sensitive pedagogy. London, Canada: The University of Ontario.