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## **Supporting Teachers as Action Researchers**

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*Teachers' professional learning has a critical influence on students' learning outcomes and much attention has been paid to understanding how effective ongoing professional learning for teachers can be achieved in schools. This paper reports on research exploring how processes of action research can be combined with support for teachers becoming active participants in wider communities of professional practice. The research approach draws on previous studies highlighting action research as an effective strategy for promoting teachers' ongoing professional learning. However, the researchers consider that such benefits may be further enhanced by encouraging teachers to systematically document, publish and present their action research initiatives so they can be shared in a wider community of professional practice. In this study the researchers supported small teams of teachers from 21 Victorian schools in their development of school-based action research projects. The projects were aligned with regional improvement priorities and broadly covered the areas of improving assessment, developing students' thinking skills and the use of information and communication technology. The teams of teachers collaborated with the researchers, regional curriculum leaders and other teachers in their region to develop and refine their initial action research questions and strategies. The teams then met locally and as a regional group several times throughout one year to present their progressive findings as they carried out their action research projects, and to reflect on what they were learning as a larger community of professionals. Teachers were encouraged to document their action research projects throughout the year which were then compiled into a book to be shared with other teachers in the region. All of the teams presented their findings to other colleagues at a final regional symposium. At the conclusion of the year the teachers were invited to participate in a survey investigating the potential for this approach to improve their experiences of ongoing professional learning. Teachers were also interviewed to explore changes in the ways they were framing the concept of their own professional learning.*

## Introduction

Action research is not a new concept in teachers' professional development and is well established as a form of practitioner inquiry that is oriented towards rational and socially just improvement of professional practice. Carr and Kemmis (1986) provide a well cited definition of action research that captures the inquiry-based and participatory nature of action research as a form of professional learning.

Action research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.

(Carr & Kemmis, 1986, p. 162)

The current context of education that links the quality of teachers' professional practice to the quality of their students' learning outcomes (Darling-Hammond, 2000, 2003; Grodsky & Gamoran, 2003) has raised the stakes for the quality of teachers' professional development and provided a renewed interest in practitioner inquiry approaches such as action research. It is now common for definitions of 'effective' professional learning (Department of Education and Training, 2005; Victorian Institute of Teaching, 2009) to emphasise the need for teachers' professional development to draw on evidence-based research and to be linked to the improvement of student outcomes.

These new understandings about 'effective' professional development create potential tensions between the evidence-based needs of the education system and the context-based learning needs of teachers. This research draws on action research to examine the use of an inquiry-oriented approach to professional learning which has been combined with the development of a system-based community of practice as a strategy to link teachers' context-based professional learning needs with the professional development priorities of a wider system.

## Background

### Teachers' professional learning

Teachers face complex situations on a day-to-day basis and are frequently required to draw on their tacit knowledge in classroom situations when there no easy answers or suitably pre-defined solutions. As such, teachers are members of a profession who are always 'thinking on their feet' to achieve satisfactory outcomes for their students. This reflection-in-action (Schon, 1983) is a critical feature of teachers' work that has been recognised world-wide by teacher registration bodies, who frequently acknowledge that reflective practices are an essential part of teachers' professional development. It is also quite commonly accepted amongst teacher registration bodies that there are differences between the terms 'professional development' and 'professional learning' for teachers.

When teachers engage in professional development activities and are given the opportunity to reflect on new knowledge and how it might apply to their classroom practice and their school context then professional learning is most likely to occur.

(Victorian Institute of Teaching, 2009, p. 1)

But while there is common agreement on the need for teachers to become reflective practitioners and to be involved in professional development activities to facilitate their professional learning, the actual creation of professional knowledge remains dogged by Schon's (1987) metaphor of the 'high ground' of research-based knowledge production undertaken by professional researchers in universities, and the 'swampy lowland' of teachers' professional knowing in practice.

“On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solution.

(Schon, 1987, p. 1)

Ironically, while teachers' tacit knowledge of their profession is often highly valued in the business of pre-service teacher education, such tacit knowledge is too frequently reduced to 'anecdotal' status by the technical rationality of 'evidence-based' discourse in education. It is now commonly assumed by policy developers that evidence-based data will provide the most effective way to measure the impact of teachers' professional learning on their students' learning outcomes and consequently guide continuous improvement (Department of Education and Training, 2005). This situation has created a suspicion amongst many teachers that 'high ground' education research projects are frequently of little value to the day-to-day practice of teachers but are an unfortunate part of being compliant.

### **Teachers as researchers**

The subjugation of teachers' tacit knowledge has led proponents of critical social science to argue that professionals such as teachers must “regain their voice in the workplace and...demand a role in the production of the knowledge on which the modern state and its experts ground their authority” (Kincheloe, 2003, p. 23). To this effect Kincheloe has argued there is a role for teachers to become researchers who are empowered in the democratic production of knowledge about their own practice. A number of principles underpin this argument (Kincheloe, 2003, pp. 26-27) which have been summarised below:

- Supporting teachers' self-directed work practices through their acquisition of research skills to carry out the goals of their classrooms;
- Viewing teachers' workplace as a laboratory where teachers are equal partners in research and development and their tacit knowledge is valued;
- Providing opportunities for teachers to vary their work by becoming actively involved in designing research problems and the conceptualisation of new knowledge;

- Supporting teachers to become researchers who can “share their findings with one another, discuss interpretations of the findings, and work together to implement strategies based on new understanding which emerge” (p. 27);
- Recognising that teachers who are researchers are more likely to understand the social impact of their work , including any “deleterious effects of certain educational strategies” (p. 27);
- Understand research as a form of productive play that can guide the work of teachers and diminish the unthinking routinisation of their professional practice.

Kincheloe’s idea of teachers as researchers creates an opposing image of good professional learning by defining the concept of “bad work” (p. 28) in the professional practice of education. He argues that bad work is characterised by an emphasis on forms of social Darwinism, where there is competition for the acquisition of social capital, creating a culture in which professional knowledge is owned by individual teachers and unlikely to be shared with others in the profession unless there is potential for personal gain. Teachers’ professional practice is essentially a private enterprise in this view of the world and although teachers are expected to be accountable in terms of students learning outcomes, their professional knowledge and practice is their own business and remains behind the closed doors of their classroom. Teachers are more likely to talk about ‘stealing ideas’ from other teachers and schools in such a view of professional learning rather than seeing themselves as collaborating and sharing knowledge that is owned and created by their profession and the wider community.

Kinchloe’s bad work is also characterised by the subjugation of professional values and ethics to other forms of ‘irrefutable knowledge’ that objectify teachers’ professional knowledge and their workplaces. An overemphasis on systems-focused research that uses research experts to collect ‘measurable evidence’ through primarily quantitative processes is likely to be understood as the most valued form of creating professional knowledge. This potentially comes at the expense of supporting the creation of teachers’ tacit knowledge, as such knowledge may be impossible to measure through quantitative processes and has most value in teachers’ individual contexts. The view that teachers can create their own professional knowledge is not likely to be taken seriously under Kinchloe’s concept of ‘bad work’ and their role in education is likely to be reduced to that of an educational technocrat that implements the objectives of a system that defines their professional knowledge and practice through a narrowly defined understanding of evidence-based research.

Teachers must be capable of identifying that instrumental rationality which not only shapes bad work but also influences that form of teacher education which promotes excessive concern with means (technique of instruction) over ends (critical examination of educational purpose).

(Kincheloe, 2003, p. 28)

### Achieving a new balance

Kinchloe's work on teachers as researchers retains a strong focus on their work environment and reflects its democratic foundations in critical social science. While Kinchloe assumes that teachers are participating in a necessary struggle against an externalised system that seeks to reduce teaching to technical concerns, the emphasis on teachers becoming researchers and producers of their own professional knowledge does resonate strongly with several of the 'principles of effective professional learning' that is reflected in other research on teachers' professional learning and departmental policy (Centre for Educational Research and Innovation, 1998; Corporation, 2007; Guskey, 2002; Hawley & Valli, 1999; Louden, 1994). The 'seven principles of highly effective professional learning' that were documented by the Victorian Department of Education and Training in 2005 (summarised below in figure 1) also reflect many characteristics of professional learning that are valued by the concept of teachers as researchers as espoused by Kinchloe.

Figure 1: The Seven Principles of Highly Effective Professional Learning for Teachers

Principle 1: Professional learning is focused on student outcomes (not just individual teacher needs)

Principle 2: Professional learning is focused on and embedded in teacher practice (not disconnected from the school)

Principle 3: Professional learning is informed by the best available research on effective learning and teaching (not just limited to what they currently know)

Principle 4: Professional learning is collaborative, involving reflection and feedback (not just individual inquiry)

Principle 5: professional learning is evidence based and data driven (not anecdotal) to guide and to measure impact

Principle 6: Professional learning is ongoing, supported and fully integrated into culture and operations of the system – schools, networks, regions and the centre (not episodic and fragmented)

Principle 7: Professional learning is an individual and collective responsibility at all levels of the system (not just the school level) and it is not optional.

Source: (Department of Education and Training, 2005, pp. 15-16)

It is clear, however that the seven principles noted above also seek to achieve these characteristics within a performance and development culture that links the quality of teachers' professional practice to their students' levels of educational attainment and life chances (Darling-Hammond, 2000, 2003; Grodsky & Gamoran, 2003). As such some of the seven principles noted above create tensions with Kinchloe's principles for good work, particularly in relation to how teachers' tacit knowledge can contribute to the production of evidence for research and how teachers' individual learning needs may also be related to achieving student outcomes. These tensions generate a need to explore how it might be possible to develop a system of professional development that is grounded in teachers' inquiry and can support teachers becoming researchers as suggested by Kinchloe, while also

creating a professional learning culture that values evidence that can measure the impact of professional learning in terms that resonate with system-focused objectives.

### **The Study**

This present study emerges from the tension between professional learning that is deeply rooted in teachers' experiential inquiry and reflection-in-action while also being responsive to the expectations of an education system. The researchers supported small teams of teachers from 20 primary schools and one secondary school in their development of school-based action research projects that were designed to encourage systematic inquiry into their own professional practice as individuals and members of a community of professional educators. The projects were aligned with regional improvement priorities that had been determined at the system level and broadly covered the areas of improving assessment, developing students' thinking skills and the use of Information and Communication Technology (ICT). Teachers were invited to explore their knowledge and practice in one of these priority areas by participating in two professional development workshops that were delivered by experts in the these areas and designed to stimulate the teachers' inquiry. They were asked to keep a journal documenting what they had learned from these activities and to record any new questions that had emerged within their teams.

The teams of teachers collaborated with the researchers, regional curriculum leaders and other teachers in their region to develop and refine action research questions that were derived from the teachers' professional development activities. The researchers and curriculum leaders then supported the teachers in their understanding of action research (Carr & Kemmis, 1986; Kemmis & McTaggart, 1988; Zuber-Skerritt, 1996) and explored strategies for action and data collection techniques that could be used to generate evidence throughout the process. The teachers were asked to maintain their journal (Holly, 1997) as they reflected-in-action on the progress of their professional learning and the impact of their action.

The teams met regularly at their local school level as they progressed with their action research projects, and on several occasions as larger clusters of schools that were aligned with their professional learning priority area. Teachers were asked to present their progressive findings to their cluster meetings as they carried out their action research projects throughout the year to facilitate the development of a wider community of practice (Wenger, 2002). The teachers were encouraged to document their action research projects as a case study throughout the year which was then compiled into a book to be shared with other teachers in the region.

All of the teams presented their findings to other colleagues at a final regional symposium that included all participant teachers from the 21 schools. At the conclusion of the year the teachers received a copy of the all action research projects that were conducted in the region and were invited to participate in a survey (N=41) investigating the potential for this approach to improve their experiences of ongoing professional

learning. The teachers were also invited to participate in interviews with the researchers to explore changes in the ways they were framing the concept of their own professional learning. In analysing the survey results and the interviews the researchers were looking for evidence of the principles of professional learning being achieved in a way that allowed teachers to grapple with the tensions discussed earlier.

## Results

**Table 1: Examples of the Action Research Questions developed by Teacher Teams**

Professional Learning Priority Area	Action Research Questions developed by teachers
Using Information and Communication Technology for Personalising Learning	<p>Team 1: Which ICT tools will be most effective within the inquiry process to support learners to reflect, shape and direct their own learning?</p> <p>Team 2: How can we use Moviemaker to support the Inquiry Learning Process?</p> <p>Team 3: How can we use an ELF to help students shape and direct their own learning?</p> <p>Team 4: How can we use online discussion forums to enhance an inquiry unit?</p> <p>Team 5: Hoes does the use of ICT personalise and engage students in inquiry learning?</p> <p>Team 6: How can we use ICT to enhance the literacy learning of P-2 children?</p> <p>Team 7: How can students use online journals or email to personalise learning?</p>
Thinking processes for personalising learning	<p>Team 8: How can I be more explicit in my planning of content as a means of infusing the Habits of Mind in English, specifically Reading?</p> <p>Team 9: How can we use the habits of Mind to personalise learning?</p> <p>Team 10: What strategies can we use that will assist our students, most of whom are ESL, to become better at using and articulating the Habits of Mind?</p> <p>Team 11: How will the explicit use of Habits of Mind help students to become independent thinkers?</p> <p>Team 12: How can we be more explicit in our curriculum planning and teaching content as a means of infusing the Habits of Mind in our subject areas?</p> <p>Team 13: How will the explicit teaching of Habits of Mind and the language of the habits of Mind assist our students in becoming independent as take ownership of their learning?</p>

Assessment for personalising learning	<p>Team 14: How can 'student learning conversations' assist teachers to personalise learning?</p> <p>Team 15: How can we explore the different ways students think about their learning so that learning becomes more personalised for them?</p> <p>Team 16: How can we explore different teachers' understanding of formative assessment (for) and ongoing (as) assessment as a means to developing personalised learning?</p> <p>Team 17: How can we use specific questioning techniques to assist us in personalising student learning in Mathematics?</p> <p>Team 18: How effective will the use of rubrics be in personalising the development of students' writing?</p> <p>Team 19: How can we use our knowledge of student engagement to personalise learning?</p> <p>Team 20: How will the use of divergent (fat) questions and reflective strategies lead to a more personalised approach to learning in inquiry?</p> <p>Team 21: How can we use our data from student reflective journals to personalise learning?</p>

**Figure 2: Teachers' methods of collecting evidence**

<p>Teacher Journal reflections</p> <p>Student written reflections</p> <p>Webcam Journals</p> <p>Student Surveys</p> <p>Pre-test/Post-test methods</p> <p>Case Studies</p> <p>Student work Samples</p> <p>ICT tools (eg Bubbl.us and mind maps)</p> <p>Creating a movie</p> <p>Teacher-nominated awards</p> <p>Social interactions between students</p> <p>Direct observations of student behaviour</p>	<p>Student Interviews</p> <p>Teacher Interviews</p> <p>Student performance results</p> <p>Photographs</p> <p>Diaries</p> <p>Anecdotal records</p> <p>Peer feedback and assessment</p> <p>Online discussions</p> <p>Whole class discussions</p> <p>Teacher team meetings</p> <p>Classroom profiles</p> <p>Student engagement</p>
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**Table 3: Teacher Survey Results**

Questions	Strongly disagree (1)	Disagree (2)	Somewhat agree (3)	Agree (4)	Strongly agree (5)	N	Mean	Median	Std Dev	Exemplary Comments
The content of my learning has been grounded in concrete tasks closely related to my teaching practice.	0%	2%	5%	56%	37%	41	<b>4.27</b>	<b>4</b>	<b>0.67</b>	<ul style="list-style-type: none"> <li>Both professional reading &amp; expert input directed me to want to learn more about THINKING and how to teach it. The action research allowed me to investigate the impact of students learning to behave intelligently, using concrete tasks. The theory was trialled in a very practical way.</li> <li>While I enjoyed the theoretical component of this module, the action part with the children is where I derived new insights and grew professionally. Working alongside other teachers meant I verbalised my discoveries and this helped.</li> </ul>
The action research approach has encouraged me to be more reflective about my teaching practice.	0%	2%	7%	39%	51%	41	<b>4.39</b>	<b>5</b>	<b>0.64</b>	<ul style="list-style-type: none"> <li>It gave me that confidence to trail new strategies and learn from each experience. It also allowed me to closely observe the results of these new practices. I felt that each time rubrics were developed and from student feedback, we were able to make an improvement.</li> <li>As with all learning it is important to reflect on what has been learnt and how this relates to previous experience. The really good part of the action research was that as a group we made specific times to meet and to reflect, review and plan ahead - all of which were invaluable.</li> </ul>
Using this approach has provided me with some useful insights into the processes of learning and development of my students.	0%	0%	5%	56%	39%	41	<b>4.34</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>I have often conducted surveys but never really used them as well as I did during this project. Learning to go back and probe deeper and really use the data has been a very worthwhile experience. Seeing the positive changes within my classroom has been very encouraging.</li> <li>The pre and post surveys gave great insight to the students thinking and learning.</li> </ul>
Participating in an action research process with my colleagues has encouraged me to adopt an inquiry-based approach to my own professional learning.	0%	5%	15%	44%	37%	41	<b>4.12</b>	<b>4</b>	<b>0.69</b>	<ul style="list-style-type: none"> <li>Given the time and opportunity it is a very productive way of professional learning. I would certainly hope to be involved in further inquiry-based learning.</li> <li>It was far easier doing this with colleagues although at times, finding the opportunity to meet, share and collate information was difficult due to other school commitments.</li> </ul>

This process of professional learning has encouraged me to pose new questions about my teaching practice and the process of learning.	0%	2%	2%	59%	37%	41	<b>4.29</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>I love the fact that teaching is a profession that can keep on evolving, therefore so does my knowledge and practice.</li> <li>It is always good to be challenged to try new ideas, and new ways of seeing things. Working as part of a team helped to provide support and encouragement, as well as raising questions.</li> </ul>
I am more likely to actively seek answers to questions my about teaching and learning using this approach to professional learning.	0%	7%	20%	49%	24%	41	<b>3.90</b>	<b>4</b>	<b>0.67</b>	<ul style="list-style-type: none"> <li>Researching and questioning others help build my own skills as a teacher. I also like to observe from others.</li> <li>Again professional dialogue is really important. Having a project to complete meant that we all remained focused and didn't allow any of us to become sidetracked or to get left behind.</li> </ul>
This approach has encouraged me to be more systematic about professional learning that is directly related to my work in school.	0%	2%	20%	63%	15%	41	<b>3.90</b>	<b>4</b>	<b>0.51</b>	<ul style="list-style-type: none"> <li>The support and guidance through this whole project has helped to make the process of a Research Project relevant by using the necessary format.</li> <li>It was good to see something through to the end, and as a result we have a clear idea of how we would like to present our learning to the rest of the staff next year.</li> </ul>
The process has encouraged me to share my professional knowledge with colleagues in MY OWN WORKPLACE.	0%	2%	7%	42%	49%	41	<b>4.37</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>There was one opportunity to share with my colleagues at a formal staff meeting but ongoing sharing at team or planning meetings is not available or sought.</li> <li>This can prove difficult in that some people are 'somewhat locked into their teaching practice' and have difficulty in moving or changing direction. There is a hesitancy on behalf of some colleagues to be reflective and this can be frustrating when trying to share what we may have learned from the experience of introducing Habits of Mind, and how it changed the way I have gone about the teaching and learning of Mathematics.</li> </ul>
This approach has encouraged me to share professional knowledge with colleagues in OTHER SCHOOLS.	0%	10%	27%	54%	10%	41	<b>3.64</b>	<b>4</b>	<b>0.58</b>	<ul style="list-style-type: none"> <li>I made contact with another school to share resources as part of this project</li> <li>This is possible while attending the sessions but once everybody goes back to their schools sharing with other schools is nonexistent.</li> </ul>

This approach to professional learning has allowed me to learn from other teachers' work.	0%	0%	5%	51%	44%	41	<b>4.39</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>• It was great to listen to the other school's stories and having the others published in the book allows me to read through those that are of particular interest.</li> <li>• Looking at other's case studies has enabled me to gain more knowledge as to what direction my teaching can go in the future.</li> </ul>
This approach has encouraged me to evaluate my work with students by collecting evidence about my teaching and students' learning.	0%	5%	7%	51%	37%	41	<b>4.20</b>	<b>4</b>	<b>0.51</b>	<ul style="list-style-type: none"> <li>• Evidence is really important, and sometimes it is important to ask more questions to get to what the student really knows or wants to know... again that is about knowing your students and making their learning more personal.</li> <li>• Helped me to discover what aspects could be improved to deliver richer insights to students.</li> </ul>
This approach allows my professional learning to be derived directly from my work with students.	0%	0%	10%	51%	39%	41	<b>4.29</b>	<b>4</b>	<b>0.51</b>	<ul style="list-style-type: none"> <li>• Yes, but it also means that I am responsible for finding further information and other ways of doing things, through my peers as well as professional reading, dialogue etc.</li> <li>• This was very evident with the reflective journals.</li> </ul>
I believe that using action research with my colleagues is more likely to encourage an ongoing approach to professional learning in my school.	0%	0%	20%	39%	42%	41	<b>4.22</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>• I think that having an end product, like a project helps to keep people focused on the professional learning, and can see that it promotes professional dialogue and the sharing of ideas.</li> <li>• From this action research we will implement reflective practices as a whole school approach P-6 in 2009.</li> </ul>
Using action research has encouraged me to adopt a collective approach to solving problems that are related to teaching practice.	0%	2%	15%	56%	27%	41	<b>4.07</b>	<b>4</b>	<b>0.50</b>	<ul style="list-style-type: none"> <li>• From not seeing a change in some children's attitudes towards reflection I needed to seek ideas and other ways from colleagues to challenge and incorporate this.</li> <li>•</li> </ul>

This approach is more likely to connect my professional learning to other aspects of school change and school improvement.	0%	5%	15%	49%	32%	41	<b>4.07</b>	<b>4</b>	<b>0.51</b>	<ul style="list-style-type: none"> <li>• Yes, because this approach uses dialogue, reflection it brings about change and new learning in a gentle way, which promotes school improvement, as well as improvement for student outcomes.</li> <li>• I am always trying to learn professionally. School / student improvement has been something I have been connected to for a long time. I believe this approach can make stronger connections however because it usually sets up a group of colleagues working together with leadership support, in a practical and documented way. This can have a very real impact on change rather than the one voice approach. It also provides very real data to support or negate the project.</li> </ul>
Average of Means							<b>4.16</b>			

## Discussion

The teachers who participated in this research demonstrated strong expectations that their professional learning would have close links to their professional practice and that it should have a positive impact on the learning outcomes for their students if it was to be valuable. This expectation was demonstrated during the process of developing the research questions which ultimately retained a very strong focus on the teachers' classroom practice. The diversity of the questions also reflected the broad range of teaching contexts even though they were framed within region's priority areas for professional development.

The details of individual action research projects revealed that the teachers were developing researchable questions which were accounting for variations in socio-economic environment, available resources, teachers' ages and level of professional experience, professional culture and commitment of their school leaders to supporting ongoing professional development. The questions being posed and researched by the teachers were in fact reflecting their 'professional learning needs' as defined by their individual specific contexts of professional practice. Many of the teachers drew parallels with their emerging experience of professional learning as inquiry with their practice of using inquiry learning with their students.

Several teachers commented that their participation in the expert-driven professional development days had stimulated and motivated them to think about those areas of their practice more deeply. This is consistent with what Wadsworth (1997) describes as the 'ouch experience' that becomes the starting point developing greater focus and purpose for learning. Ultimately it was the prospect of participating in concrete action-oriented activities in their school context that resulted in the teachers' deep professional learning. In this sense the teachers were drawing on the expert knowledge gained from a professional development workshop to then view their classrooms as 'laboratories' for investigation in terms of their own professional learning as well as that of their students.

*Both professional reading and expert input directed me to want to learn more about THINKING and how to teach it. The action research allowed me to investigate the impact of students learning to behave intelligently, using concrete tasks. The theory was trialled in a very practical way.*

The process of investigating the impact of their professional learning provided the teachers with a concrete way of connecting with a broad range of ideas informing the measurement of their students' learning. But this process was not done uncritically as might have been suggested by Kinchloe's ideas of 'bad work'. On the contrary the teachers generated a diverse range of data collection strategies that were intended to reflect their individual contexts and engaged in lively discussions about what constitutes evidence of learning. It was also clear that many teachers were linking the data they had collected to their performance as a teacher and a departure point for directing their future learning.

*Evidence is really important, and sometimes it is important to ask more questions to get to what the student really knows or wants to know... again that is about knowing your students and making their learning more personal.*

*[The process] helped me to discover what aspects could be improved to deliver richer insights to students.*

Teachers reported that the ongoing and collaborative process used to develop the researchable questions and strategies for action had framed their professional learning as a community-focused experience rather than a one-off event to be attended by individuals. The benefits of this approach was noted in the survey results and interviews and can be understood in terms of their very focused engagement in an inquiry-oriented community of practice (Wenger, 2002). The teachers talked about professional growth that was sustained by their ongoing dialogue with other teachers, the collective and project-based nature of their inquiry, and the chance to learn from other teachers' case studies of professional learning.

*While I enjoyed the theoretical component of this module, the action part with the children is where I derived new insights and grew professionally. Working alongside other teachers meant I verbalised my discoveries and this helped.*

*It was great to listen to the other school's stories and having the others published in the book allows me to read through those that are of particular interest.*

*Looking at other's case studies has enabled me to gain more knowledge as to what direction my teaching can go in the future.*

## **Conclusion**

The teachers in this research were supported in their development of research skills that would allow them to generate professional knowledge that had direct relevance to their individual classroom goals and the goals established for professional development in their region. They were encouraged to see themselves as researchers and view their workplaces as 'laboratories' where they can draw on their tacit knowledge of context-based practice to experiment with the development of new understandings and knowledge about their work. The use of collaboratively developed action research projects allowed the teachers to use reflective inquiry as a project-based process that could explore how their own professional learning goals could also be synchronised with the professional development priorities of the system. The teachers noted that expert-provided knowledge stimulated their inquiry but then they needed to experiment with this in a concrete way in their own practice. The action research process that was framed and reported within their wider community of regional practice supported the teachers' perception that they were doing research and the development of highly valued and context-based professional knowledge that they could share with their colleagues.

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