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**Managing research tensions while exploring ICT teacher professional
development to support multiliterate student outcomes**

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Abstract

Doing educational research in contemporary times increasingly means operating with complex funding models. This paper explores the generation and management of tensions in a research project that was funded as an ARC Linkage (APAI only) grant where the industry partner was an informal group of schools. The context for the research was the development and implementation of teacher ICT professional development that achieve multiliterate student outcomes. The paper explores the tensions generated through three stages of the research characterised as conceptualization, building bridges, and pillars of strength. Data are drawn from the researcher's reflective journal as well as from communications with the industry partner participants. Findings suggest that the most effective way to manage tensions was through building mutually respectful relationships in face-to-face environments, and that the competing but complementary roles of the researcher as PhD student, professional developer, and project administrator strengthened these relationships.

Introduction

The main theme for this conference is a reassessment of what it means to do education research in contemporary times when research dollars are scarce and highly competitive. Models of funding create particular tensions between the competing interests of the parties involved. These tensions become even more pronounced when an industry partner is involved, especially when that industry partner is an informal coalition of schools rather than a legally constituted corporation with clearly identified executive officers with power to make decisions on behalf of the corporation and sign legal agreements. As a further complication, a model of funding that solely supports a postgraduate award to a research student has its own tensions between the research space of the chief investigators who receive no funding from the grant and that of the research student whose PhD study it funds. Such a model of funding is the Australian Research Council (ARC) Linkage (Australian Postgraduate Award Industry (APAI) only) scheme. This scheme solely funds a stipend to the APAI recipient and the industry partner provides additional funds in cash and in kind to support the student research.

This paper will explore how the management of an ARC Linkage (APAI only) funded research project attempted to minimise the tensions between the interested parties while enabling a productive outcome for all. The industry partner in this project was an informal coalition of schools that had a formal memorandum of understanding with the research university to promote: the concept of life long learning; a curriculum embedded in authentic pedagogy which aligns with community needs; and the professionalism of teaching. Under this memorandum of understanding the schools were committed to providing an opportunity to take part in programs for staff exchange, student support and research while the university agreed to enable teachers to audit courses, and take part in teaching programs. The research project matched well with these aims and commitments.

The paper will identify and discuss tensions surrounding three stages of the project's implementation: conceptualisation - developing a research topic and negotiating with an industry partner; building bridges - consistent contact through baseline data collection; and pillars of strength - activities and interpersonal actions to establish collegial relationships. Data to support this discussion are provided through reflective journal entries and interview data. Other aspects of the research project are reported in Prestridge and Watson (2002), Watson, Prestridge and Dempster (2002), and Watson and Prestridge (2003).

In this paper the parties carrying out this research are identified as follows: the ARC grant chief investigators (the investigators); the APAI recipient (the researcher); the industry partner (the schools); the research participants (the teachers).

Conceptualisation

This section outlines tensions that developed when organising and designing an ARC Linkage (APAI only) grant where the industry partner was an informal group of schools.

Three aspects are discussed in this section: the nature of the area of study, qualifications and experience of the APAI recipient, and the design of the research project.

The nature of the area of study

The research project proposed to explore models of teacher information and communication technology (ICT) professional development that supported multiliterate outcomes for students. At the time of project conceptualisation, the schools were involved in the trial of a new pedagogical model called the *New Basics* (Department of Education, Qld, 2000). This approach to teaching and learning both assumed, and specifically identified, transformative teaching practices involving ICTs. To do this effectively the teachers in the schools required extensive professional development that would result in transformative classroom practices. In addition, the *New Basics* included in its curriculum organizers, the concept of multiliteracies (New London Group, 1996). Multiliteracies is a complex term not well understood at the time, and lack of understanding about this concept, the requirement to work towards multiliterate outcomes for students, as well as confusion about how multiliteracies related to ICTs contributed to the tensions for the teachers.

While the researcher and the schools had a shared interest in the research topic, rather than creating commonality, tension was generated from the different perspectives and outcomes required from this research topic. From the researcher's perspective, this was a research topic that would enable the successful completion of PhD study. However the schools, though supportive of this aim, perceived this research project as providing benefits in two ways: meeting the professional development needs of their teachers in ICTs and the development of understanding of multiliteracies; and the prestige and recognition of being part of a research project that would publish at an international level. Brennan, Kenway, Thomson and Zipin (2002) note competing interests of "what counts as useful and worthwhile knowledge" (p.77) as a tension in educational research.

Qualifications and experience of the APAI recipient

A second significant tension from the perspective of the schools related to the qualifications and experience of the person who would be the APAI recipient, and thus the person with whom they would have the most interaction. It is usual in the case of research grants that fund an APA that after the grant is awarded the institution advertises for a suitable recipient. However the identity of the potential recipient was a significant factor in the schools' willingness to be involved in the research and thus willingness to sign the ARC grant application. In the case that is the subject of this paper, the potential APAI recipient (the researcher) was already identified and had started initial work on her PhD research on the topic of the grant application. The researcher had been a teacher for over ten years and had developed a professional background in ICTs and professional development. This interest in ICTs had been extended through postgraduate studies, involvement in specialist ICT projects, and work as an educational advisor in ICTs within the same educational system as the participating schools. The researcher had also lectured and tutored undergraduate students in the field of ICTs for learning and she had very outgoing and engaging professional characteristics.

The researcher's qualifications and experience thus formed an ideal bridge between the disparate interests of the parties in the research. The following extract from the researcher's reflective notes following the first meeting between herself, one of the investigators, and the schools' liaison principal highlights the schools' interest in the research project:

[Researcher] [The investigator] told me that this meeting was crucial to the [schools] coming on board this research project and that I had to be confident and knowledgeable about this project..... [the principal] thankfully didn't ask me questions about the project, more so about myself. I think that I answered all of her questions to her liking. She did ask [investigator] what had to be done with respect to signing documents but other than that the attention was mainly given to me.....As [the principal] was showing us around the classrooms, mainly talking about their use of technology, she introduced me to the teachers as "the lady that would be doing research with computers next year". She even mentioned to one that I was an educational advisor and would be doing some professional development.On our drive home [investigator] seemed happy with the meeting but quite taken that [the principal] didn't remember her name as she was the one who'd done all the work in getting this off the ground anyway. Just goes to show you how impressed she was with my qualifications.

At this early stage of conceptualisation, the tension between the researcher's academic concerns and the need for practical outcomes for the schools was apparent but somewhat ameliorated by the qualifications and experience of the APAI recipient.

Design of the research project

The third source of tension during the conceptualisation stage was the design of the research project that firstly needed to collect baseline data and then implement a model of professional development. The collection of baseline data involved the development of conceptual understandings of what is required of teachers' ICT professional development to support multiliterate student outcomes. The research methodologies used to collect baseline data included survey, interviews, focus groups and classroom observations. Action research methodology informed a process of on-going collaborative research and development to implement a sustainable model of teacher ICT professional development that had the potential to support multiliterate student outcomes.

Tension was generated from two aspects of this research structure. Firstly, as this project required the cooperation of the schools, the usual freedoms available to PhD students regarding pace and order of undertaking research tasks were somewhat curtailed. The schools were willing to be involved with the project because it dovetailed neatly with their professional development needs as trial schools in the *New Basics* project referred to earlier. Because of the urgency of getting this professional development under way it was necessary to prioritize identification of baseline understandings with respect to ICTs and multiliterate student outcomes. This required data collection to begin almost at the

same time the researcher commenced full-time study. The intensity of this data collection left little time for literature and methodological review, and heightened tensions in regard to academic commitments associated with higher degree study. This tension caused by “competition between the industry partner and the university for the time, loyalty and identity of the [student] researcher while at the same time seeking to reach a settlement satisfactory to both parties” was also noted by Brennan et al. (2002, p.77).

The other cause for tension came from the extent of input required of the teachers. These teachers were not party to the original agreement that was brokered between the investigators and the principals in the schools. The mobile nature of the teaching profession, aligned with the time lapse in setting up the research partnership and applying for and being granted the research funding, mitigates against this desirable relationship between researcher and participant. Further, funding the necessary teacher release required for interviews, surveys, and incidental discussions as part of baseline data collection, as well as for collaborative professional activities as part of the action research process, caused tension for some of the participating schools, even though both cash and in-kind support were detailed in the initial legal agreement. This tension was partially alleviated by frank financial discussions between the parties.

This section has detailed how tensions were generated in the conceptualisation stage of the project by the disparate needs of the parties involved, and exacerbated by the complex funding model. The factors that contributed to these tensions included the nature of the area of study, the qualifications and experience of the APAI recipient, and the design of the research project. While these causes of tension may not be unusual in funded research projects, what was important was how they were managed to ensure the best possible outcomes for all parties concerned. The following section - building bridges - explores how these tensions were managed in the context of this research project.

Building Bridges

The crucial stage for bridge building could be considered to have taken place during the baseline data collection. The most effective way found to manage the tensions arising in the project was to build a mutually respectful relationship between the researcher, and the teachers through consistent contact in a face-to-face mode. Table 1 provides an overview of the contact between researcher and teachers in the initial months of the project and the purpose for the respective data collection methodologies.

Data Collection Methodology	Purpose
Interviews with ICT coordinators (N=4)	Establish personal beliefs and values about ICT Establish teacher meaning of multiliteracies and role of ICT plus the teaching strategies required to achieve outcomes Elements of current professional development that have had an effect on teacher use of ICT e.g. theory/reason given for use of ICT, teaching strategies; background on current ICT PD, specific elements of PD; determine if major focus on ICT PD is skilling; personal and general ICT PD needs
Interviews with	Develop background of ICT and teaching practice; gather personal beliefs and

Classroom Teachers (N=7)	values about ICT; establish current practice in teaching and use of ICT; establish teacher understanding of multiliteracies & relationship between outcomes and new technologies; teaching strategies that achieve multiliterate outcomes; specific methods/elements of PD that change teaching practice; models of PD in ICT that are effective and specific elements
Emergent Interviews- Deputy Principal (N=1)	Based on data gathered specific ideas were generated that needed further clarity and justification: focus on skilling vs constructive ICT PD + school reform limiting application of ICT and driving ICT PD
Survey classroom teachers random (N=49)	Attitudes and use of ICT in learning; ways use ICT and related pedagogy; understanding of multiliteracies, teaching strategies and relationship to ICT; PD types and models
Classroom observations of classroom teachers (N=16)	Using an ICT integration framework to analyse multidisciplinary and constructivist classroom practices

Table 1. Contact between researcher and teachers during the initial months of the project

The baseline data collection process began with a meeting with principals where the project and its intended outcomes were outlined and a request made for interviews with computer coordinators and classroom teachers interested in ICTs. Interview questions with a covering information letter were given to the principals at this time for their prospective teacher participants and a follow-up telephone conversation took place to organise a specific date and time for the interviews. These simple procedures supported the establishment of a professional position and the development of a mutually respectful relationship. Providing the questions prior to the interview enabled the teachers to be prepared and confident, supporting the development of a comfortable, collegial atmosphere. The following extract is a reflection from the researcher’s journal at the end of a day of interviews with two of the schools:

[Researcher] Everyone was really prepared which was so positive. Most had taken the time to jot down some ideas on the interview schedule.....I also thought that it was really professional that these teachers were given time out of the school day and we didn’t have to meet before or after school. I think either the principal or deputy relieved them or they got a relief teacher in. I was happy that they didn’t have to use their own non-contact time.....Sometimes we went a bit off track from the interview questions but I think this helped in a way to make things comfortable and it gave them a chance to talk about their concerns.

Mutual respect and the valuing of this research project is evident through this reflective passage. The schools approached these semi-structured interviews with a professional demeanor, providing time for their teachers to participate in these interviews as well as ensuring that they were prepared. The interviews were directed towards an understanding of human thought and beliefs, on what was perceived as sustainable and transformative ICT professional development in the minds of these teachers. They involved arousing the emotive nature of the human driven by the influence of change as well as the challenge brought through learning with and about ICT. These interviews tried to unlock what Ornstein (1995, p.127) regarded as the notion of the teacher’s voice, and corresponded

with concepts such as “teacher’s perspective”, “teacher’s frame of reference” and “getting into the teacher’s heads”. By providing avenues for deviation as well as maintaining structure, these interviews were able to reach the depth that exposed underlying beliefs and values that drive current teaching practices.

Opportunistic sampling for further interviews arose as a response to the inductive analysis of this interview data. Erlandson, Harris, Skipper & Allen (1993) contend that once inside the context, the researcher can “distinguish among stakeholders, determine how they are related, and choose among respondents for qualities related to the research” (p.68). As themes emerged pertaining to models of ICT professional development, specifically the need for skill training compared to more constructivist models, a semi-structured interview was held with a deputy principal (Marcus), considered a curriculum leader and prominent person within the schools leadership team. This emergent interview was valuable to both parties as it addressed key principles underlying the relationship between the *New Basics* project and ICT professional development. It was mutually informative as the interview challenged beliefs held by both parties. The following extract taken from this emergent interview between the researcher and Marcus illustrates how meaning was negotiated between the parties:

[Researcher] Do you think that the Rich Tasks have limited the use of ICT into the non-juncture year [years in which there are no Rich Task] units of work?

[Marcus] I think it has expanded them at a greater rate than it would of if they weren’t there. It is given a sense of urgency and a breath that wouldn’t have been there else wise.

[Researcher] Because one you have to do a web page, another research using the internet, and email but has it just limited ICT integration to those things in the Rich Tasks that you have to cater for?

[Marcus] No I think that is covered by the ICT that is covered in other Rich Tasks. Each one of us has become so cogniscent of the content of the Rich Tasks that we are able to memorise that ok if our kids are going to publish that we have eight computers those kids are going to have to do that quickly so we have to be using our keyboarding techniques earlier.

[Researcher] Is it driving it completely?

[Marcus] Is it driving it before? I can only compare that to before hand and the impetus wasn’t great, it was happening slower.

In this instance, the researcher was trying to ascertain the impact of designated assessment practices (Rich Tasks) within the *New Basics* project, on the use of ICTs in learning, and the need for ICT professional development. This interview extract illustrates the challenge of held beliefs regarding the relationship between the use of ICTs in the classroom and Rich Tasks. The researcher’s questions reflect her belief that Rich Tasks will limit the use of ICTs in learning whereas Marcus sees the Rich Tasks as expanding the uses of ICTs. The findings from similar data found in teacher interviews

were reported in Prestridge and Watson (2002) which addressed the ICT professional development needs of teachers in relation to current educational reform.

Classroom observations were also used to collect baseline data. The main purpose of the classroom observations was to establish current classroom practices in regard to the integration of ICT. There are many advantages to being a participant observer (Erlandson et al., 1993; Gay & Airasian, 1996; May, 1997; Peberdy, 1993) and the researcher was able to draw on her own teaching experience to describe the context and classroom practices. A classroom observation form based on the work of Bogdan & Biklen (1998) and Peshkin & Glesne (1992) was used to record field notes. Member checking was enlisted to support the credibility of the data collected through classroom observations (Erlandson et al., 1993; Lincoln & Guba, 1985). Each teacher observed was sent a classroom observation report that included a brief description of what was observed including evidence of constructivist principles and learning outcomes, and a reflection by the researcher. A letter accompanied this report asking teachers for validation by adding further information or amending sections. The constructivist principles of higher order thinking, authentic task, autonomous learners and process/metacognition were used in a framework to analyse classroom practices associated with ICT. These principles were drawn from literature pertaining to constructivism (Ashman & Conway, 1997; Jonassen, 1991; McInerney & McInerney, 1994). A framework explicating the types of ICT integration (DEST, 2001) was also used to analyse ICT classroom practices. The classroom observation reports, though seeking credibility of data, were also instrumental in developing and maintaining a mutually respectful and collegial relationship with the teachers. Classroom observations can be considered an intrusive procedure, and can generate anxiety and uneasiness (Peshkin & Glesne, 1992). However the process of member checking, where the teachers were able to read what the researcher had recorded with the opportunity to amend or add information, alleviated these stressful feelings and confirmed the professionalism of the researcher as an observer not a judge.

The third data collection tool was a questionnaire that included both Likert-scale and open-ended responses. Combining both qualitative and quantitative methods enabled the loosely structured, emergent, inductively grounded approach to data gathering to be supported by a more structured, defined deductive approach (Creswell, 2003). The questionnaire was designed to provide further clarity to data collected on ICTs in learning, multiliteracies, and ICT professional development. The questionnaire was distributed and implemented at two afternoon network meetings of the schools. A total of 49 questionnaires were completed. These questionnaires offered a more general approach to data collection in that a greater number of teacher opinions, beliefs and values could be canvassed. The process of collecting data in this way also offered the research team a greater audience to explain the project and a public venue where general questions and interests in the project could be satisfied.

A final event that was pivotal to the development of collegial relations and the managing of tensions in the initial stages of this research project was the presentation of the collated data drawn from interviews, classroom observations and the questionnaire at regular network meetings for teachers from the schools. This presentation of data was well

received as it demonstrated commitment to the project and respect for the research participants. As recollected within the researcher's journal, the coordinator of the network meeting, thanked her for firstly "presenting these findings" and especially for "coming back, as we often get researchers doing these things but not sharing it with us".

Bridges were built through the process of collecting baseline data. Underlying all of these practices was the development of a mutually respectful and collegial relationship between the researcher and the schools. The tension that initially was generated from differing needs and interests was ameliorated by the researcher's consistent face-to-face presence even though ICT professional development (the major reason for the industry partner commitment to the project) was not provided during this time. The only negative point that arose from this consistent contact was competition for the researcher's time, in this case, a limitation of the usual freedoms available to PhD students regarding pace and order of undertaking research tasks.

Pillars of strength

The pillars of strength that supported the relationship between the researcher and the schools were those that enabled professional discourse to occur in a supportive environment. Different opportunities were either planned or arose out of the development and implementation of an ICT professional development model, designed to support multiliterate student outcomes. This section discusses the various activities during this time that provided opportunities for professional discourse.

It was necessary to develop a supportive, trusting, working partnership with a core group of interested teachers who would involve themselves not only in the design and implementation of an ICT professional development model but also in the monitoring of, and reflection on, the model over a substantial period of time. The research method needed to provide a framework for on-going investigation while being flexible and responsive to change and diverse pathways, and enabling collaborative action that empowered the teachers and engendered ownership. Above all, the nature of the inquiry needed to emerge as the investigation proceeded to ensure that context variables and unpredictable interactions could be considered in the design features. Such a method was found in action research.

Action research requires the pursuit of action-and-change while simultaneously engaging in research-and-understanding (McTaggart, 1991, 1997a; Oja & Smulyan, 1989). It is founded on assumptions of authentic group participation, real ownership of research theory and practice, and elective change (Altrichter, Kemmis, McTaggart, & Zuber-Skerritt, 2002; McTaggart, 1997b). These elements of action research supported the collaborative design, implementation and evaluation of an ICT professional development model. A leadership team was formed of interested teachers from each of the schools. Somekh (1995, p.340) sets this formation as a "precondition of action research", signifying that the research must be based on a mutual concern or felt need to instigate change. A period of reconnaissance (Elliott, 1991) was instituted to analyse and discuss baseline data and put forward ideas for an ICT professional development model.

Implementation of the model followed with the project team leaders supporting teacher candidates who had elected to participate in the ICT professional development programme. The leadership team observed the model in action and reflected incidentally in professional workshops, online with their teacher candidate, or in formal monitoring meetings. These reflective activities informed the improvement of the ICT professional development model systematically and strategically. Figure 1 diagrammatically represents the action research process taken.

Action research provided a process for the construction and reconstruction of an ICT professional development model. Through discourse and practice, the researcher and the leadership team engaged in strategic action through repeated spirals enabling systematic learning. Group participation in this model development engendered real ownership of the process as well as ownership of the model, which, in turn, encouraged the development of conscious awareness and critical discourse. Day (1995, p.362) highlights the mutual “co-equal” relationship that can be engendered by action research. This capacity for working “with” the research participants, developing ownership and equalizing power relationships has drawn researchers seeking these collaborative and collegial interactions to action research methodology (Sanderson & Allard, 2003).

Evidence of the importance of collaboration and collegial interactions is provided in the following extract taken from the opening discussion of a feedback interview at the end of the research project between the researcher and one of the leadership team [Janelle]:

[Researcher] So what do you think was beneficial about this whole thing?

[Janelle] Um, I really liked the sharing games between all the teams and the feedback that you get from people and just the professional dialogue that happens. I really did get a lot out of that.

[Researcher] Yes

[Janelle] and um and I think that it makes you reflect on your own practice which impacts on everybody else around you and the three members that I've got, its, as frustrating as its been we've had some really good discussions about you know how to overcome the problems and I mean that's half the sharing and

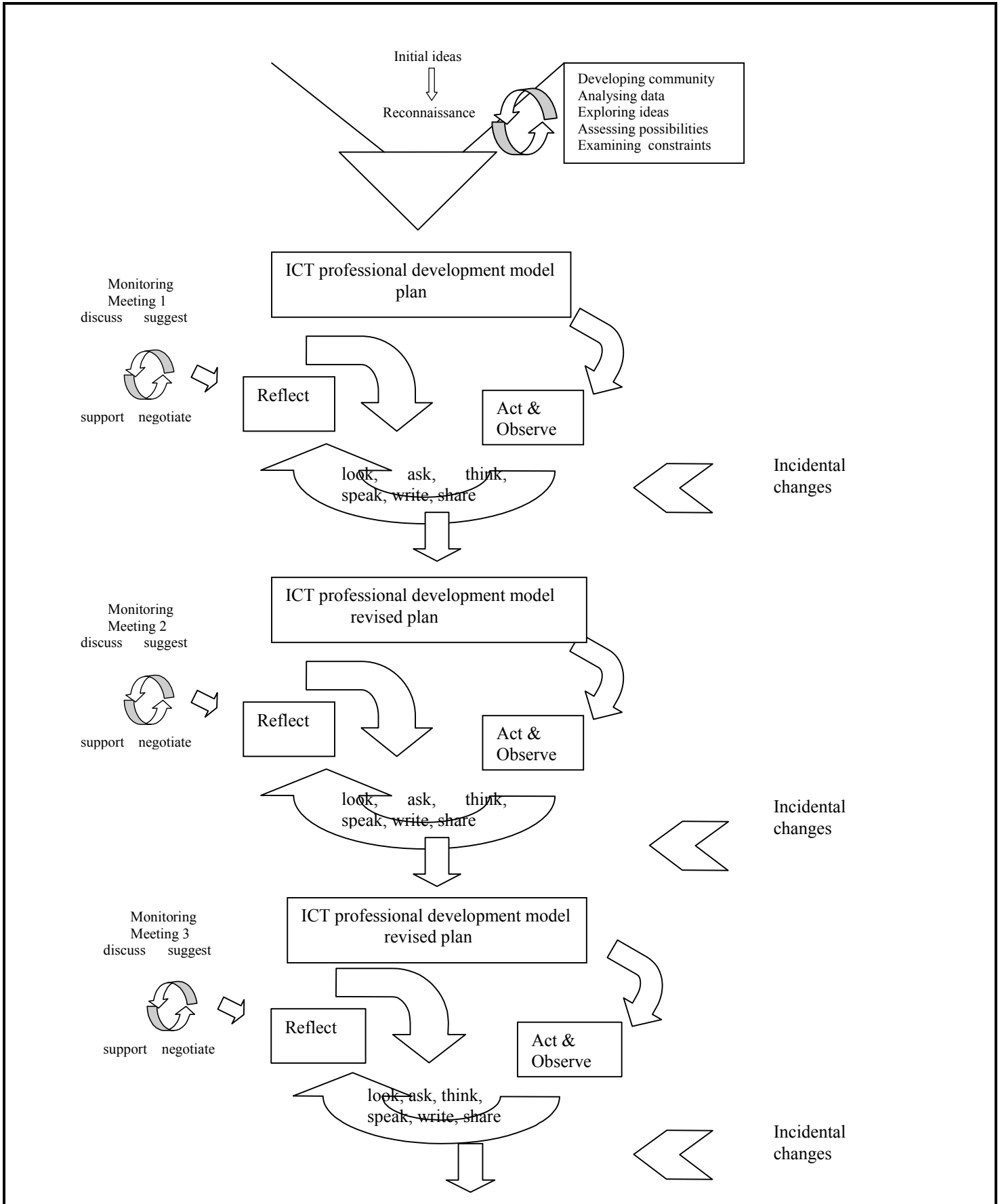
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[Researcher] OK at the project team meetings?

[Janelle] Yes. The project team meetings I've really enjoyed. I really find walk and talk great for these things cause I mean you get to say what you think and it's interesting to hear a different people oh a different person's perspective on it and I mean, teachers are terrible listeners but I mean it's a really good time to actually listen to what they're saying and when you listen to what they say it gives you ideas about what you want to say, so just some of the little strategies have been really good.

Figure 1: Action research spiral for the development, implementation and evaluation of an ICT Professional development model adapted from Kemmis and McTaggart (1988, p. 11) and Kemmis (1982, p. 13) .



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A similar perception was indicated in a final feedback questionnaire to the leadership team. The question asked: “What needs to happen to ensure that the core elements of this ICT professional development model (inquiry process, threaded discussion, workshops and sharing sessions) are likely to be sustained?”. One of the leadership team (Jeremy) responded:

- [Jeremy] Make sure that sense of community is created in face to face meetings - find some instrument/survey to check that a sense of

community has indeed been created...When this community is assured- the true sharing and benefits will surface. I think the terms- collegial sharing and support groups- are often overlooked and ignored in our workplace. How many times does it happen that after school- teachers may get together socially and the phrase comes out, "Don't talk shop.." Thus, we are almost conditioned to stop professional dialogue outside of school hours. Is this a taboo?

Both responses highlight the importance of providing opportunities for professional dialogue. As noted earlier, the leadership team worked very closely with the researcher in the action research process as well as through the ICT professional development activities with their school's participant teacher. The strong mutually respectful relationship that developed between the leadership team and the researcher was instrumental in managing the implementation of the ICT professional development model. The team leaders "voices" were heard and had impact on the model itself. This relationship was considered the most important element in creating a sense of community as indicated by Jeremy in his response to the question "What were the most important elements in creating a sense of community?":

[Jeremy] Relationships between [the researcher] and the leaders, also the relationship between leader and candidate. As leaders we had to try to convey [the researcher's] intent and messages and [the researcher] depended on us to do this. Sometimes I may have let you down by not doing enough with regard to reflection cycles and discussion lists.

With the implementation of the ICT professional development model itself there have been opportunities for relationship building with the teachers involved in the model, as well as the principals. These activities have a common thread, that of professional discourse, providing opportunities for the critical examination of ideas and beliefs in small and large forums. The ICT professional development model was based on the formulation and implementation of an inquiry project that focused on the use of ICTs to support multiliterate student outcomes. Teachers, supported by the researcher and the leadership team, used an action research process to implement a multidisciplinary project. The project provided a platform for other professional development activities that included on-line threaded discussions lead by teachers, workshops on multiliteracies, web page construction and ICT integration, planning meetings for teachers with the researcher and weekly meetings with their team leader as well as sharing sessions presented by the teachers. All of these professional development activities were considered pillars that strengthened the relationships between the research participants for two main reasons. Firstly, these pillars are grounded in reflective action through experimentation and collaboration within structured inquiry (Clarke & Erickson, 2003; Mc Niff & Whitehead, 2002; Zuber-Skerritt, 1993) ensuring the professional nature of the dialogue. Secondly, these pillars provided opportunities for continued consistent contact between the researcher and the teachers.

The conclusion of the project was celebrated with a public meeting in a local venue where the teachers presented their achievements and reflected on their involvement in the

project. This celebration provided a goal for the teachers and an opportunity for them to enjoy the respect of their local community including their principals and district office personnel.

The pillars that strengthened relationships during the time of model development and implementation were found to be of a professional nature and involved consistent contact with the researcher. The design and implementation of an ICT professional development model, responded specifically to the needs and interests of the schools. The competing roles of the researcher as PhD student and professional development provider were able to merge by ensuring that when professional development was provided, data collection also took place. This dual role enhanced the supportive relationship between research and teachers.

Conclusion

This paper explored how tensions were first generated and then managed during a research project funded as an ARC linkage research (APAI only) grant. It contributes to the discussion on what it means to conduct education research in contemporary times and concurs with Brennan et al. (2002) that tensions emerge from different positionings on the expected outcomes from the research by interested parties. While the funding model for the research contributed to the tensions within the project, attention to managing these tensions achieved mutually beneficial outcomes.

Tensions were generated in three stages of the research identified as conceptualisation, building bridges, and pillars of strength. During conceptualisation, the nature of the area of study, the qualifications and experience of the APAI recipient, and the design of the research project all generated tensions while providing opportunities to manage them. The most effective way found to manage the tension was through building mutually respectful relationships between researcher and participants through consistent contact in a face-to-face environment. This contact involved professional practices such as providing pre-interview questions, member checking and presentation of baseline data as it became available, and a research methodology that developed ownership and mutually empowering relationships during the development and implementation of the professional development model. The research relationships were strengthened by the competing but complementary roles of the researcher, as PhD student, professional developer, and project administrator. Considering the interests and needs of the schools, establishing productive working relationships and maintaining consistent contact played a major role in achieving mutually productive outcomes.

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References

- Altrichter, H., Kemmis, S., McTaggart, R., & Zuber-Skerritt, O. (2002). The concept of action research. *The Learning Organisation*, 9(3), 125-131.
- Ashman, A., & Conway, R. (1997). *An introduction to cognitive education*. London: Routledge.
- Bogdan, R., & Biklen, S. (1998). *Qualitative research for education: an introduction to theory and methods*. London: Allyn and Bacon.
- Brennan, M., Kenway, J., Thomson, P., & Zipin, L. (2002). Uneasy alliances: University, Workplace, Industry and Profession in the Education Doctorate. *The Australian Educational Researcher*, 29(3), 63-84.
- Clarke, A., & Erickson, G. (2003). Teacher Inquiry. In A. Clarke & G. Erickson (Eds.), *Teacher inquiry: Living the research in everyday practice* (pp. 1-6). London: Routledge Falmer.
- Creswell, J. (2003). *Research design: Qualitative, quantitative and mixed method approaches*. Thousand Oaks, CA: Sage Publications.
- Day, C. (1995). Qualitative research, professional development and the role of teacher educators: fitness for purpose. *British Educational Research Journal*, 21(3), 357-369.
- Department of Education, Qld. (2000). *New Basics: Curriculum organisers*. Brisbane: Access Ed., Education Queensland.
- DEST. (2001). *Making better connections: Models of teacher professional development for the integration of information and communication technology into classroom practice*. Canberra: Department of Education, Science and Training.
- Elliott, J. (1991). *Action research for educational change*. Buckingham: Open University Press.
- Erlanson, D., Harris, E., Skipper, B., & Allen, S. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park: Sage Publications.
- Gay, L., & Airasian, P. (1996). *Educational research: Competencies for analysis and application*. New Jersey: Prentice-Hall.
- Jonassen, D. (1991). Evaluating Constructivist Learning. *Educational Technology*, 31(9), 28-33.
- Kemmis, S. (1982). Action research in retrospect and prospect. *The action research reader (2nd ed.)* (pp. 11-31). Melbourne: Deakin University.
- Kemmis, S., & McTaggart, R. (1988). *The action research reader*. Waurin Ponds, Victoria: Deakin University Printery.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park: Sage Publications.
- May, T. (1997). *Social research. Issues, methods and process. Second Edition*. Buckingham: Open University Press.
- Mc Niff, J., & Whitehead, w. J. (2002). *Action research: Principles and practice (2nd edition)*. London: Routledge Falmer.
- McInerney, D., & McInerney, V. (1994). *Educational psychology constructing learning*. Australia: Prentice Hall.
- McTaggart, R. (1991). Principles of participatory action research: international contexts and consequences. *Adult Education Quarterly*, 41, p. 170.

- McTaggart, R. (1997a). Guiding Principles for Participatory Action Research. In R. McTaggart (Ed.), *Participatory action research* (pp. 25-44). Albany: State University of New York Press.
- McTaggart, R. (1997b). *Participatory action research: International context and consequences*. New York, USA: State University of New York Press.
- New London Group (1996). A Pedagogy of Multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-91.
- Oja, S., & Smulyan, L. (1989). *Collaborative action research: A developmental approach*. London: The Falmer Press.
- Ornstein, A. (1995). The new paradigm in research on teaching. *The Educational Forum*, 59(2), 124-129.
- Peberdy, A. (1993). Observing. In P. Shakespeare, D. Atkinson & S. French (eds.), *Reflecting on research practice* (pp. 47-57). Buckingham: Open University Press.
- Peshkin, A., & Glesne, C. (1992). *Becoming qualitative researchers : an introduction*. New York: Longman Publishing.
- Prestridge, S. & Watson, G. (2002). *To skill or to construct? Effective Information and Communication Technology professional development within school reform*. Paper presented at the Australian Association for Research in Education Conference, Brisbane, December
- Sanderson, V., & Allard, A. (2003). 'Research as Dialogue' and cross-cultural consultations: confronting relations of power. *The Australian Educational Researcher*, 30(1), 19-40.
- Somekh, B. (1995). The contribution of action research to development in social endeavours: a position paper on action research methodology. *British Educational Research Journal*, 21(3), 339-351.
- Watson, G. & Prestridge, S. (2003). A networked learning community approach to sustain teacher ICT professional development. *Australian Journal of Educational Technology*, 19(2): 227-240.
- Watson, G., Prestridge, S., & Dempster, N. (2002). *The interaction between ICTs and Multiliteracies in the understandings of teachers who are charged with implementing educational reform*. Paper presented at the International Conference on Technology in Education Conference, Badajoz, Spain, November.
- Zuber-Skerritt, O. (1993). Improving learning and teaching through action learning and action research. *Higher education research and development*, 12(1), 45-58.