Empowering Teachers in School and University Partnerships

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Abstract

This paper describes a partnership between a university and a cluster of government and non-government schools. Its purpose was to engage early career scientists (tertiary students) to work in the science classroom as peer tutors/mentors with the aim of improving students' attitudes towards science. Using a self-study approach (Loughran, 2004) the author explored the issues of a collaborative process. Data was sourced and triangulated from teachers and administrators, the early career scientists and students, which revealed that successful partnership was dependent on the empowerment of teachers within their organisational culture.

Introduction

To encourage school and university partnerships the Australian government has released a range of initiatives in science education including the Australian School Innovation in Science, Technology and Mathematics projects, ASISTM (2004) and the Scientist in Schools program (Peacock, 2007). Intrinsic to these specific purpose grants is an expectation that schools and universities can readily work together, perhaps due to a generalised but incorrect perception that all educators at all levels share a common cultural paradigm (Dallmer, 2004; Kinsler, & Gamble, 2001).

In reality however, schools and universities are very different kinds of organisations with cultures so diverse that professionals working within them have difficulty understanding one another's needs and values (Sirotnik, & Goodlad, 1988). Collaboration between universities and schools is a complex and challenging domain educators within each of these establishments are deeply influenced by their respective overarching mission which influence their career direction. The mission of the university is to teach, research and build community partnerships (Maurrasse, 2001). The mission of the school is to educate the children within the community. In a partnership these differences must be recognised and accommodated. Even more so when the

challenge requires a triad partnership involving a university, a government school and non-government school as is presented in this paper. As the demand for effective partnership grows, it is essential to identify the underlying principles that facilitate a partnership between institutions that are similar in intent but dissimilar in approach.

Two fields of knowledge underpin this study of partnership. At the organisational level there is the organisational culture (Goodlad, 1994; Kinsler, & Gamble, 2001) and at the individual level there are teacher's beliefs and practices (Ford, 1992; Keys, 2005, 2007; Lumpe, Haney, & Czerniak, 2000). These two domains of knowledge will now be further elaborated upon.

Organisational Culture

Cultural difference between school and university is the consistent theme that emerges from the literature (Dallmer, 2004; Maurrase, 2001; Sirotnik, & Goodlad, 1988; Warren, & Peel, 2005). Culture comprises the norms, beliefs and practices/actions of the educator. These may include observed behaviour regularities, the norms, the dominant values espoused by the educator, their classroom practice, the philosophy and rules of working within that institution, and the climate or feeling that is reflected in the physical layout (Schein, 1985; Kinsley, & Gamble, M. 2001). Sirotnik (1991) describes three attributes that characterise the differences between universities and schools. These are the setting, an ethic of enquiry versus an ethic of action, and a merit system with promotion and tenure versus an egalitarian work ethic. The first attribute—the cultural setting relates to issues of the allocation and constraints of time and space within the school as compared to the flexible time and space allocation within a university. Except in the case of direct school business or emergencies teachers cannot be disturbed while in the classroom, particularly in the case of primary and early childhood teachers.

The second attribute—an ethic of enquiry versus an ethic of action, relates to teachers perspective on the importance of reflective research practice, and with getting tasks completed. Goldston and Shroyer (2000) conducted a study of thirty-three classroom teachers engaged in action research that revealed two major hindrances. Firstly, teachers did not identify themselves as researchers and viewed action research as something additional to their teaching practice. Secondly, teachers felt that their work environment did not provide enough time to engage in action research.

The third attribute is the university merit system with promotion and tenure versus the egalitarian work ethic that exists within schools. Within a number of school systems teachers still operate within a flat, monochromatic career structure where teachers are not promoted on the basis of merit but by seniority (Kinsler, & Gamble 2001). Each year teachers move up to the next pay increment. Generally, there is no provision for three or four year experienced teachers to move to the top of the pay scale because of their outstanding teaching performances. Teachers are usually unable to apply for senior teaching positions until they are at the top of their pay scale. There may be some variation of this merit system between the states and territories in Australia. Nevertheless, the teacher has two career choices: wait out the years to become a senior teacher or move into an administrative role which may allow them to circumvent the teaching seniority requirement. As to whether such work ethic will continue to survive in the 21st century remains to be seen. Nevertheless while it does, the anti merit system with its flat monochromatic career pathway will continue to influence the motivation of teachers.

Teacher beliefs

The second theoretical underpinning of this paper is teacher beliefs. The beliefs of teachers and how they impact and influence teaching and learning is well documented (e.g. , Ford, 1992; Keys, 2005, 2007, Lumpe, et al., 2000). Ford proposed that contextual beliefs, capability beliefs, and goals may hinder a teacher's ability to engage in an initiative such as partnership with a university. Contextual beliefs are the reasons as perceived by teachers for their ability (or otherwise) to implement certain teaching approaches or a curriculum initiative, dependent upon certain favourable context (Ford, 1992). These contextual factors could be the lack of resources, time and support from administration. Lumpe et al. (2000) have taken Ford's contextual beliefs and identified twenty-eight contextual factors that were likely to have a certain impact on the implementation of science instruction. These twenty-eight factors were identified as contributing to the "enabling belief" or the belief of individual teachers to assist their implementation of a more effective science program. Factors included such provision of time, additional science equipment, professional development, teacher support and support from administration.

The second of Ford's (1992) belief or factors is teacher capability beliefs, which are similar to what Bandura (1997) described as perceived self-efficacy beliefs: the perceived ability and judgement of the individual to undertake a certain task. In this study, this refers to teachers perceived ability to conceptualise, plan, and implement a partnership, based upon their positive and negative past experience. Teachers see themselves as not having the expert knowledge to

undertake and lead a project. This may be partly due to their undergraduate training and limited exposure to working within other contexts or how society has perceived their abilities (Hargreaves, 1994). Unless teachers have had the opportunity to engage in research in their post graduate studies or have been involved in research driven projects or a community based projects, then their experiences tend to be practical and classroom oriented. Teachers' undergraduate training has in some institutions focused on there being effective classroom teachers rather than initiators and leaders of externally funded projects. When teachers are employed this focus is reinforced through the continual daily demands of classroom teaching. Opportunities to engage in partnership requiring action research or grant applications for improving practice simply do not arise.

The third hindering factor is teachers' goals. Ford (1992) argued that the link between goals and personal agency beliefs (capability and contextual beliefs) should be recognised within research. Ford stated that, "motivation interventions that do not respect the goals emotions and personal agency beliefs that a person brings to a situation may produce short term effects, but in the long run they are likely to fail or backfire" (p. 202). Like all other individuals, teachers do not engage in a partnership or innovation unless they have a compelling reason to do so (Schwahn & Spady, 1998). Teachers who engage early in an innovation may perceive the motivating factor to be promotion or a means of solving classroom management issues. Alternatively, teachers may see the initiative or project as having long-term benefits for their students. Fetters, Czerniak, Fish, and Shawberry (2002), in an evaluation of a professional development program, found it necessary to communicate the intrinsic benefits of a professional development program, including the collaborative research experience, to the teachers in terms of improved student learning and increased confidence in teaching otherwise the teachers just lost interest.

The Project

The partnership reported on in this paper was a government funded Australian School Innovation in Science, Technology and Mathematics (ASISTM) project. The overall purpose of ASISTM grants was to improve students' literacy, capability and interest in science, mathematics and technology. Schools interested in participating were required to form a cluster with three or more schools and a partnership with outside support agencies. Depending on the nature of the project, the school clusters and their partners were eligible to apply for grants up to $120 000.00.

The purpose of this particular ASISTM project was to raise the interest and motivation of science among students by recruiting early career scientists —ECS— (tertiary science students) to work alongside teachers in the classroom as peer tutors and mentors to the students. The project was based in a regional university and received a $120 000.00 grant over an eighteen month period.

The participants of the project included: four schools—one government and three independent schools, including two teachers from each of these schools; and a university mentoring program that recruited the tertiary science students. There were eight teachers at any one time participating in the project, two of whom were replaced because of transfer and other school business making a total of ten teachers over the eighteen month period. The teachers ranged in age and experience: from mid twenties with two years, teaching experience to early fifties with twenty-five years, teaching experience. Their professional background and training varied, with teaching qualifications and experience from the United Kingdom, India, New Zealand and Australia. Their qualifications ranged from undergraduate qualifications in education and science to post-graduate diploma and masters qualifications in education. The teachers' roles within their schools ranged from that of a grade 7 classroom teacher, to science teacher to head of science department, to president of the local science teachers' association.

Partnership was the key element in the management of all the ASISTM projects. The expectation of the funding body was that three or four schools would take the initiative to form a cluster, identify an appropriate project that met the ASISTM criteria, and find a suitable supporting agency such as a tertiary institution to partner with in the submission and implementation of their ASISTM project. However this was not always the process that eventuated. In this case the project was one of the first to be implemented and at that time few schools and teachers were aware that the ASISTM grants existed. It was therefore the initiative of the university (external agency) to bring it to the attention of schools and generate an interest in participating. This was where the challenge began, prompting the focal question of this paper: How do we develop and sustain effective partnership between schools and universities?

Methodology

The research methodology was framed within the domain of self-study (Baird, 2004; Loughran, 2004; Manke, 2004). The purpose of self-study is the improvement of the individual's practice,

and the type of evidence that is used is dependent on the context in which the person is working (Whitehead, J. 2004). Self-study research may be about one's self in practice, or how we understand ourselves in practice, and is not restricted to the classroom (Feldman, Paugh, & Mills, 2004). It is useful in educational leadership where the leader is seeking to address issues of, for example, power, community, and building partnership (Manke, 2004). As the coordinator of this project self-study provided me the platform to analyse and critically reflect on the partnership.

Data Collection

The data was collected and triangulated from multiple sources:

- emails with teachers, and heads of department,
- notes taken at meetings with school principals and administrative staff,
- minutes and transcripts from audio-recorded monthly business and planning meetings with teachers and heads of department,
- electronic journal reflections of the teachers,
- audio-transcripts of debriefing and planning sessions with teachers conducted on PD days; of focus groups with ECSs' and students; and discussions with a critical friend and reference group.

Data Analysis

In the search for common descriptions and issues a constant comparative analysis of the data was undertaken in four stages:

1. The multiple sources of data were analysed and identified using Ford's beliefs framework (1992) and Sirotnik (1991) decription of organisational cultural that exists within the school. The transcripts of audio-recordings of interviews and focus group sessions were read and re-read and compared with teachers' journals, minutes taken at meetings, and anecdotal records arising from notes taken with meeting with principals and heads of department. From this process, re-occurring events and on-going management issues were identified and categorised.

2. The re-occurring events and issues were presented and discussed with the assistant coordinator of the project and the participating teachers to verify the data and where possible seek further explanation.

3. Each ASISTM project was assigned by the funding body a critical friend to work with the project, their role and involvement dependent on the nature of project. Because of the critical friend's involvement with other ASISTM projects his input was sort to confirm whether or not events and re-occurring issues were unique or similar to those identified in other ASISTM projects.

4. At the conclusion of the project an outside critical expert reference group of twenty was organised to verify the analysis of the data. The group comprised leaders in science education, national and state government curriculum program managers, and critical friends and coordinators of other ASISTM projects across Australia. The group was formed by invitation at a national science education conference. The session was audio-recorded and fully transcribed. Feedback provided at this session confirmed the issues and experiences that emerged from the data analysis.

Findings and Discussion

The findings of this paper demonstrate how teachers' beliefs and goals were evident within and influenced by three attributes of a learning institution's culture; the setting, the ethic of enquiry versus the ethic of action and the egalitarian work ethic (Sirotnik, 1991). Each of the three attributes are discussed and supported by examples of data representative of the teachers' contextual and capability beliefs and personal goals as related to that attribute. All participants' are given pseudonyms for anonymity.

The Setting

Setting is that domain of time, space and resources (Sirontnik, 1991; Lumpe, et al., 2000) and relates to flexibility of time management and freedom under the direction of leadership to undertake various tasks or projects. These together with the teachers' contextual and capability beliefs served to encourage or discourage teachers' engagement in certain projects or activities based upon their prior personal positive and negative experiences. The teachers' contextual beliefs to work within the time constraints of their school setting first became evident in the early stages of the project through email communication:

Paul, project administrator (email) — *"I have a tutor that is ready for your year 9 class…"*
Samantha, teacher (email)— *"Unfortunately (not now) the Yr 9s have exams next week during their normal science lesson time….It's a bit hectic this end at the moment as we have kids out all over the place"*

This teacher's focus was the upcoming exams for her class. Samantha did not perceive that she had the flexibility to quickly accommodate the introduction of a tutor. It became necessary for Paul to accommodate Samantha's teaching schedule. This issue recurred in the planning and programming sessions and was reiterated in the monthly management meetings:

Paul—*"An issue in terms of planning for next year, is getting timetables as soon as possible. I know schools have got their own issues with getting timetables but as soon as they are available we could then commence allocating the tutors a lot more efficiently."*

John (science teacher)—*"We don't really have the time to get together and plan a program together. It's hard enough to get together with another colleague at school to plan a program together.*

Teachers' perception of executive leadership support was also a critical factor in facilitating the sharing of knowledge and the continuance of the project. As part of the teachers' professional development (PD), funds toward release time to visit each other's schools observe the class and exchange ideas was provided. Two teachers from two project cluster non-government schools responded differently to the idea of visiting schools within the cluster. This PD strategy was discussed at length in the monthly management meetings. It highlights the teachers' beliefs regarding their views of supportive leadership:

Samantha (non-government school)—*"I just need to obtain approval from my principal before these visits can occur here. Unfortunately the politics between schools (upper mgmt) has to be considered here."*
Anila (non-government school)—*"Just to let you know that I will be visiting John's class (government school) next week between 10:00 am to 12:30 pm. I will forward my relief form next week…*

The issue here was the perception of leadership support when collaborating with non-government or government schools. While teachers may have a variety of motivations for their actions, Samantha's interpretation of the school's leadership is a strong contextual belief that she needed to deal with. As for Anila she constantly asked how and when the PD would take place: school leadership support was not perceived to be an issue. Eventually only Anila took the opportunity to visit another school.

Another incident demonstrating both teachers contextual and capability beliefs was when teachers from one school reported at the monthly management session how the school planned to change the teaching program to incorporate a middle years trial program. This proposal meant that classes and teachers would be dramatically reorganised which in turn would impact on the continued viability of the ASISTM project in their school. Senior teachers—John and Marissa took immediate action and approached the school executive, reminding them of the signed agreement, and were able to persuade the executive to delay its decision. Marissa was the head of the science department and John at that time was the president of the local science teachers' association. Their status and experience is most likely a contributing factor accounting for their perceived beliefs and success in influencing the executive leadership of the school. This, re-enforces the view that teachers' contextual and perceived capability beliefs (Ford, 1992; Lumpe, et al. 2000) determine the likely response or behaviour. Beliefs held by teachers may not necessarily be an accurate reflection or interpretation of their work environment but are nevertheless real obstacles or, as in this incident, opportunities, within the mind of the teacher.

The ethic of enquiry and the ethic of action

The project involved the teachers' collaboration in the planning, implementation and participation in participative action research (PAR). Evidence was found that reflected Ford's (1992) description of teacher capability beliefs in undertaking these three aspects of the project. When the schools were invited to participate many teachers expressed a lack of confidence and time in undertaking a grant application. The teachers commented in the staffroom, *"We don't have the time or know how to go about the project," and were appreciative of our initiative and support* (notes taken at meetings). The drafting of the project proposal was left with my colleague and myself. The teachers were asked at the planning meetings to check through the draft and discuss any concerns that they had. The minutes taken at the planning meetings documented the level of participation from each school. This varied extensively from full cooperation and attendance and review and evaluation of each aspect of the project through to a passive acceptance and infrequent representation at the planning sessions. What stood out clearly in this project was that the majority of the teachers did not have the requisite process knowledge or experience.

As part of the project the teachers agreed to engage in participative action research (PAR). This involved critical reflection on their current practice and develop strategies that may be beneficial when having an ECS in their classroom. To assist the process the teachers were provided training in action research and paid release time to attend professional development days that

focused on their action research. The teachers' lessons were also videotaped at the commencement and various stages of the project. These videos were provided to the teachers to assist them in their critical reflections. In the early stage of the project the video footage was emailed to the teachers together with some helpful guidelines to assist them in their analysis. However, the naivety of that idea was quickly realised when the teachers failed to respond. An ethic of enquiry was not their priority. The teachers were more concerned with their day-to-day school tasks—an ethic of action.

Matthew expressed his frustration at a PD meeting: *"I have got to be honest and say that I haven't really planned it as well as I could have. I'm not trying to make excuses but I'm going to…everything is always coming at me like this then he (the ECS) will turn up at my class and I think s**** I have got you again today haven't I. What am I going to do with you?"*

Only two of the ten teachers were known to have some prior experience in action research and were making a consistent contribution to the research. Even with the provision of paid leave some of the teachers found it a challenge to attend. Whilst they valued having an ECS assisting in the classroom—an ethic of action, they were less willing to engage in action research—an ethic of enquiry (Goodlad, 2004).

Anila (verbal apology provided at the PD)—*"Jenny sends her apologies she had to complete her year 11 tests."*
Emily (email)—*I'm very sorry for the short notice but Matthew and myself are unable to attend this afternoon as we have meetings and reports to complete."*
Matthew (email)—*My apologies for not being able to attend (the PD) today. My leave for the day has not been approved as camps and other excursions are also on today.*

Eight months into the project, not all of the teachers were taking ownership of their own professional development as anticipated. This is not a negative reflection on the teachers; just the reality of teachers' capability beliefs within the school culture. For some of the teachers, learning to engage in an ethic of enquiry was to take the duration of the project. Nevertheless over time, through encouragement and sharing with the teachers, the value of an ethic of enquiry began to be recognised, and the process applied. At the conclusion of the project the teachers were able to define the role of an ECS and develop strategies that would facilitate that role in the classroom to be shared with their colleagues.

The egalitarian work ethic

Within the school setting, teachers work within a flat monochromatic career structure. The implication for the ASISTM project was how to motivate the teachers to value the project and take on a leadership role. For teachers to prioritise the project they needed to see it as an opportunity to enhance their promotional prospects or improve their role within the school. This was shown by one of the teachers who decided not to continue with the project.

Joanne (email)—*Dear Phil, as I am taking on some other leadership roles (at school) this year I feel that it would be unwise for me to continue with the … program…*

This teacher's perception was that the project did not fit into the school mould for furthering her career. As a young career-oriented teacher, she had been teaching for about five years and was making some serious career choices. The demonstration of leadership within the school appeared to be was first and foremost in her mind.

The project was faced with a work ethic that failed to encourage teachers to engage in activities that were not considered part of their teaching responsibilities nor perceived by the teachers to be a part of their overall role. Furthermore the teachers' individual personal goals within the project needed to be addressed. It became clear in the interviews and feedback sessions that some of the teachers viewed the project as addressing their immediate classroom management needs:

Year 9 student focus group interview —*"And she (Anne – ECS) used to work with Anthony a fair bit… He's a kid who needs some help in our class. … I think he just has problems concentrating."*
Emily (the teacher of the above-mentioned Year 9 class)—*"… the literacy kids talk about anything but science. And so that's what I used Anne for and what worked really effectively… she fitted in really well with them and kept them on task and she wasn't sort of afraid to discipline them and keep them on track"*

The purpose of the project was to use the ECS as someone that would enhance the teaching and learning of science and not to manage student behaviour, however some teachers at a PD revealed other intentions:

- keep students on task and manage behaviour
- focus is on the misbehaving and disinterested students and not on the struggling student.

- a person who can be accessed for expert knowledge in science
- assist with some preparation of a unit of work

(summarised notes taken from the white board at the first PD)

The above list shows a conflict in the purpose. The last two activities closely aligned with the intent of the project whilst the other two did not. John a senior teacher, continued to remind the team of our overall purpose: *"I think that's going down a different direction … from what I thought of the program."*

Alignment of each teacher's personal goals with that of the project goals was essential. It was a continual challenge to remind some of the teachers of the need to think beyond their immediate classroom management needs. The senior teachers proved to be a valuable asset in maintaining the purpose and direction of the project.

Conclusion

The intention of this paper was to critically reflect on the partnership between school and university with the aim of improving current and future partnerships. The findings of this study revealed that the empowerment of the teachers was very much dependent upon teachers' context and capability beliefs and alignment of their goals to confidently engage in a productive partnership (Ford, 1992). The teachers needed to believe that they had the endorsement and support of the school to undertake the project and that the project was highly valued. The teachers needed to be confident that they had the knowledge and professional capacity to engage in the project from its conceptualisation through to the research and evaluation. Teachers' goals had to be acknowledged and aligned as closely as possible with the partnership goals without stifling teachers' motivation and losing sight of the overall purpose of the project. It was necessary to bring each of these sets of beliefs and goals into the partnership equation. So what were the lessons learned and the implications of this partnership?

Unless teachers are empowered through PD or in-service programs then partnerships will be solely initiated and driven from the university. Without the involvement of teachers the nature of the projects may be limited in scope. Projects will be driven by the perceptions and understandings of those outside of the school. There will be a lack of understanding by outside providers of some of the complex issues that exist at the 'grass roots level' both in the classroom and in the community.

The quality and sustainability of a partnership in a project can be hindered by teachers' lack of knowledge or their perceived capability to undertake a partnership. Teachers need to achieve self-belief in their capacity to lead a project and outsource roles and tasks where and when needed. They need to be provided the necessary skills and knowledge to engage in a partnership. Not all teachers are interested in partnership and would rather be concerned with the immediate needs of their class. Nevertheless, there are those teachers willing and able if empowered to make a valuable contribution to the partnership by bringing a richer understanding of the complex issues that exist at the 'grass roots level'.

To achieve this goal of productive sustained partnership, pre-service teacher education programs need to broaden their programs to include partnerships, project management and leadership either within existing practicum programs or offered as electives (eg., Central Queensland University and Charles Darwin University). Government and non-government schools need to encourage their teachers to participate in professional development that focuses on project management, grant applications and research. The schools' executive leadership need to cultivate a culture that empowers teachers, so that perceived obstacles of time, resources and leadership are no longer a hindrance in the formation of partnerships.

To move forward into partnership effective strategies need to be identified for empowering teachers. There needs to be a cultural paradigm shift within the school community that recognises teachers as more than just classroom operatives. Teachers need to be encouraged to be initiators and leaders of partnerships outside the confines of their immediate classroom and recognised for their efforts. The future of partnership between school and university is embedded in the empowerment of the teachers.

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