Is Professional Development a Solitary or a Collegial Experience?

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Declaration of Originality

This thesis contains no material that has been accepted for any other degree in any University. To the best of my knowledge and belief, this thesis contains no material previously published or written by any other person, except where due reference is given in the text.

Signature [Signature]

(Myrna Allan)
Glossary of Terms

Throughout the thesis, a number of terms have been abbreviated to common use within the teaching fraternity.

**CRT**: Casual Replacement Teacher. An emergency or fill-in teacher used when the designated teacher is absent.

**CSF**: Curriculum Standards Framework covering Years Prep (Level 1) through to Year 10 (Level 6).

**CSF 2000/ CSFII**: Revised version of Curriculum Standards framework

**DoE/ DEET/ DE&T**: Department of Education/ Department of Employment Education and Training, (currently known as Department of Education and Training). These name changes all refer to the same body controlling the State Government schools in Victoria.

**GAMAST**: Girls and Mathematics, Science and Technology, an initiative to get more girls interested in these areas conducted by the Department of Education in the mid to late 1980’s.

**HSC**: Higher School Certificate. The predecessor of the VCE, but only existed for Year 12 students as their final year of schooling.

**KLA**: Key Learning Areas. There are eight KLA’s: English, Mathematics, Science, SOSE (Studies of Society), Technology, Health and Physical Education, and Arts, LOTE (Languages other than English).

**MAV**: The Mathematical Association of Victoria -the professional body for mathematics teachers.

**PD**: Professional Development. A term commonly used by teachers to refer to conferences, in-services, seminars and so on.
POE: Predict, Observe, and Explain. A method of understanding/using the scientific method: Predict what will happen, observe what did happen, explain the results.

SEALP: Selected Entry and Accelerated Learning Project. A scheme devised for high achieving students who will complete Years 7 to Year 10 in three years instead of the usual four. Students sit an aptitude test in Grade 6 for entrance at Year 7.

STAV: The professional body of the Science Teachers Association of Victoria.

STAVCON: The annual Science Teachers Association of Victoria Conference held late November or early December each year.

SET: Science, Engineering and Technology. This was an initiative of the Victorian Government to improve the standing of science in the community. There were a number of facets of this scheme, including the Research in Schools Initiative from which this thesis was borne.

SIS: Science in Schools. The latest initiative of the State Government that replaces the SET program.

VCE: Victorian Certificate of Education. Certificate undertaken by Years 11 and 12 students. The ‘new’ VCE refers to a major overhaul of the existing VCE subjects and how they are assessed.
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Abstract

There exists a consensus about the importance, but little else, of the ongoing professional education of teachers. The professional development of teachers is often seen by teachers to be a purely private matter serving self-improvement and/or career advancement. Equally often it is assumed to be essentially collegial concerned with improved school responses to redefined social expectations.

Little is known about how, at the intersection of personal interactions and social necessities, truth is constructed by teachers about the significance of professional development exercises. This ontological research investigated the influence of the community of practice in signifying professional development of teachers' professional identity formation. It is a proximal influence that has been largely neglected in the literature on professional development.

The case studies conducted here of science teachers in a rural secondary school initially assumed that certain types of autonomy and collegiality, together with differing workplace conditions have a more positive influence on teachers' professional development than others. The use of teacher portfolios in professional development reporting was investigated as institutional scaffolding for facilitating the sharing of insights from often remote professional development experiences, and as a means of improving communication within the science department.

Positioning theory, as a tool in discursive psychology, was used to analyse professional development experiences as narrated by four colleagues in conversations with the author. A study of their pronoun grammar and the illocutionary force of their utterances made more determinate the momentary location of the person of the teacher in each storyline. The analysis focussed on the relation between what one has or believes one has or lacks a right to perform, and what one does in the light of that belief as a science teacher at the school. It revealed the implicit social rules that maintain and transform their acts and actions, shaping both professional identities and institutional structures such as acceptable teaching practices and mandated curriculum content.

The epistemological authority of the claims and beliefs of my colleagues about student learning and their biographical acts and actions as teachers appear to be indistinguishable. Their storylines present the person of the teacher as both socially determined and agential in social transformation. In this dual praxis the discursive community of the staffroom is revealed as a proximal mediating influence that is significant in shaping the local rules that enhance or inhibit self-improvement and organisational capacity for educational development.
CHAPTER ONE

Is Professional Development Solitary or Collegial?

An Introduction
Chapter 1

Is Professional Development Solitary or Collegial?

There are ever changing demands on state schools and teachers, and to meet these challenges professional development has been a central concept in educational management. Individual teachers are often expected to take care of their own professional development whilst the school presents in-service education to change teacher behaviour in areas that are targeted in government strategies in education. These desired changes in teachers’ behaviour are expected to change workplace conditions in the organisation or be a response to ongoing change.

‘Collegiality’ has been frequently characterised as one workplace condition that proves conducive to teacher’s professional development and school improvement. It has frequently been argued that schools cannot adapt readily to changing public expectations and social conditions without staff working together collegially. While collegiality may be ‘imposed voluntarily’ by school management, it is most often simply assumed. However, autonomy exists in an uneasy relationship with collegiality as a workplace condition and is often thought to be an important motive in a teacher’s self-improvement.

McLaughlin (1994, p480) argues that healthy professional communities “at all levels embrace diversity. They acknowledge and integrate the tension between individual and group, and they possess effective strategies for conflict resolution that enable individual preferences and need to coexist within the context of shared beliefs, goals and values.”
This thesis examines this paradoxical claim or purpose in the everyday conversational world of a large rural secondary school in northern Victoria at which the author has been a staff member for sixteen years. Bangarra Secondary College formed in 1995 from the amalgamation of a technical school and a high school, and consists of a junior campus (Year 7-9) and a senior campus (Years 10-12). Since the amalgamation there has been a strong emphasis on Professional Development (PD) organised by the school management team for all school staff to emphasise a comprehensive curriculum which allows for different individual learning styles of students including Gardiner’s Multiple Intelligences, Bloom’s Taxonomy, De Bono’s Thinking Hats and Glasser’s control theory in the classroom, so staff are very aware of the expectation that they vary learning tasks to suit different student needs, particularly those with few academic ambitions.

An energetic curriculum committee on which the author sits exists at this school and 2002 oversaw a number of major changes in the local curriculum. These include a class at Year 7 involved in the SEALP (Selected Entry and Accelerated Learning Project), as well as major reform to the Year 10 curriculum where all studies apart from Maths and English will be offered as electives, with all classes being five periods per week. By having students select subjects of interest to them, it is hoped to improve the engagement of students. This has challenged all faculties to rewrite their programs. In the Science Department we have prepared six new units with titles including ‘The Chemical Detective’, ‘Mind Matters’ and ‘Robotics’. The science staff have had to get together to work out the ‘why’, ‘what’ and ‘how’ of the courses that allow for individual teaching and learning styles.
This research examines how the sense of community in the science department at Bangarra has developed to this position since the amalgamation of the two science departments and the influence of professional development on the staff involved.

In this longitudinal study conducted over four years into teachers’ perceptions of professional development, I have sought an ‘orienting theory’ that accounts for the relation between the teachers’ autonomy and collegiality in understanding my colleagues’ accounts of their professional development in that period. I have found that teachers describe their personal professional development by reference to critical learning experiences and I have sought to find out how these experiences and associated learning were described. I have aimed to reach an understanding of what “worked for them” and not simply as passive consumers of PD programs but as active agents in their own learning.

I have sought to understand the technologies of ‘self’ (Foucault, 1988), the habits of mind (Dewey, 1983) of my teacher colleagues and the practical reasoning they use in changing themselves to achieve new capacities. The secondary teachers in this study are bound by social organisation of subject departments in large schools and teachers make continued reference to social organisational influences over their agency.

This study is interview-based with a contemporary historical and biographical perspective. It documents the professional development events of four teachers through analyses of my conversations with them over three years. A questionnaire-based survey of the whole staff was
used in the first year (1999) to provide general background information that is reported in Appendix B-1. I looked at the events my colleagues described in terms of their changing professional identity in the psychological space described by two dimensions of experiences – public/private and individual/collective as shown in Figure 1. Attention was focussed in teachers’ accounts on their discursive positioning of themselves and others. The conversations were transcribed and marked or ‘coded’ to show where repositioning occurred in their stories.

Figure 1. The psychological space-negotiated in professional development activities treated as professional identity projects (after Harre, 1983).

In positioning theory, developed as an analytical tool as a dynamic alternative to role theory, the participants have a choice in taking up positions and contrary positions rather than predefined behaviours or ‘roles’ in interactions. The meaning and intent of their acts/actions are attributed to individual cognition in a concrete discursive interaction. Discursive acts and
actions are taken as indissoluble. The individual in reported dialogue in this analysis is presented responding to a generalised other rather than a concrete specific state. The particular institution context is explored in the analysis.

Research into dialogue reflects a complexity of reflexive, multi-layered and mutually interconnected processes and there is great variation in the issues examined and in the analytical methods applied. What participants say is analysed by some researchers in terms of individual acts, often reported as monologues. Here the conversational interviews are treated as discursive interactions, reported as dialogue (Fawns and Redman, 2002).

I have used positioning theory (Harre and van Langenhove, 1999) to argue how conversations may be interpreted and may enhance an understanding of moment-to-moment participation in social episodes. Positioning can be used as an analytical tool to help ‘code’ meaning found in a conversation. The use of personal pronouns (Mulhauser and Harre, 1990) as a coding device is a relatively new procedure to locate the person of the teacher in the conversation about their professional development and learning is illustrated in the coding of the dialogues in this study.

In my research, a major concern was the recording of events and the way they were perceived by the teachers who were invited to read and comment on the transcripts of their interviews. Episodes included critical incidents and phases that may have changed over the course of the research. I felt as researcher that while my informants may, and do in particular interactions, disagree with my conclusions and interpretations, “These reviewers should not disagree over the actual facts of the case” (Yin, 1989, p.144).
My orienting theory was based on a number of issues involved in defining the collegial and solitary nature of professional learning. Collegiality is often considered a necessary condition for professional development. Little (1990, p. 509) draws attention to the fact that “the term collegiality has remained conceptually amorphous and ideologically sanguine.” As a result, it is legitimate to ask whether the statement that teachers’ collegiality leads automatically to the disappearance of their isolation and contributes to their professional development, is perhaps too simplistic.

The most common variants of collegiality that Little (1990) describes include “storytelling” and “scanning for ideas” which refer to opportunistic contacts at a relatively great distance from the actual classroom and any joint enterprise. “Sharing” and “joint work” are also mentioned as collegial behaviours that imply an interchange of new ideas, materials and methods, and shared responsibility for teaching and support for the professional initiatives of colleagues. “Aid and assistance” is another variant identified by Little and refers to the asking and giving of help. I believe that these are all essential features of a faculty that is to working effectively as a group in which individual interests and identity are subordinated to some shared cultural agency.

In the context of collegial action, autonomy has often been labelled as a deficit. It may indicate a defensive attitude. Ashfort and Lee, (1990) argue that autonomy is not a good starting point for teachers’ professional development, because it leads to confidence in outmoded educational views that are inspired by the teachers’ own experiences as a student. However, Hargreaves (1993) describes three forms of autonomy that indicate why it remains the necessary noun. Like Little, Hargreaves attempts to unfold the multiple meanings and predispositions identifiable in teachers’ exploration of their own habitus or self (Harre, 1990).
Constrained individualism is a situation that forces teachers to work autonomously because of administrative or organisational limitations. Teachers wanting to collaborate do not have the time or place to consult with one another. This was a position taken by my colleagues in our earlier conversations. The 'time' factor was seen as a huge problem, and the staff commented that it prevented them from collaborating as they desired. It needs to be understood in terms of the context of the research dialogues themselves. This 'time' factor can be an attribute of personal psychological time in particular career phases (Huberman, 1991), or social/institutional time.

Strategic individualism occurs when teachers, because of the high pressure on them (for example external pressures such as expectations from parents, the growing number of pupils with educational needs or from perceived institutional challenges to existing competencies in teaching style and use of Information Technology) choose consciously to withdraw into "their own" teaching where they find satisfaction in the relationship with their students.

Elective autonomy is identified as a third variant of autonomy or life span. For intrinsic reasons teachers choose actively to work alone. This position could involve a specific task for a limited time frame involving creative, reflective, and personal renewal. Colleagues in the Science Department in this study assert all of these positions of autonomy and collegiality in the dialogues reported here. I have also asserted them myself at different stages in this four-year study.
Autonomy and collegiality then are two interdependent conditions of professional agency and can each have a positive or negative influence in particular contexts. Clement and Vandenberghe (2000, p85) argue, “A good organisational design of the tension between autonomy and collegiality creates professional challenges.” In order to collaborate adequately, teachers need to be able to work alone effectively sometimes; and vice versa, in order to work autonomously adequately, teachers need to collaborate sometimes. I found that the assertion of autonomous or collaborative action can only be understood and interpreted in the teacher’s positioning in the story-line they construct in everyday school conversations.

Collegiality can challenge teachers intellectually and give them fresh ideas. It can aid in the professional development of the teacher and by its inclusiveness contribute to emotional support. There is an assumption in collegial discourse that participants subordinate their interest to that of the conversational group but retain the freedom to keep their learning firmly in one’s own hands. The individual teacher’s autonomy is necessarily respected for the unique insights that he or she may bring to collegial dialogue, seeking a new footing in a changed social world.

Besides the embodied and embedded dialogical nature of professional identity formation, a number of other issues pertinent to professional development are identified in this study. Learning opportunities may be either formal or informal. They may occur in dedicated professional development programs or between staff in an everyday context of seeking advice or assistance from a colleague. The presence of “new” learning opportunities is a necessary, yet not a sufficient condition for professional development. Past experiences and beliefs play an important role in the way individual teachers react to learning opportunities and are shown in
this study to be just as important as the learning space created within the school in explaining commitment to acquiring new competencies.

McLaughlin and Yee (1988) define the level of agential capacity as the level of the power and control teachers have to access resources, to participate in decision making, and the availability of the instruments (teaching material, time, money) to work adequately. This indicates some agreement with Prawat’s (1991) notion of teacher empowerment as referral agents.

To improve teachers’ pedagogical content knowledge, Young (1990) argues that teachers should be given more chances to participate in decision-making at the classroom level and should be freed of administrative, non-instructional tasks and should have adequate preparation time and teaching materials. This asserts an agential ontology but ignores the ontology of social structures in that is the possible. The social reality is that state school teachers are continually being asked by society to do further duties above and beyond classroom teaching, and at the same time cut down on the use of resources, such as photocopying and other teacher requisites. If cultural expectation is a largely unconscious and unintended outcome of the teachers’ work then to achieve a change in teaching agency will require conscious commitment to change the rules or resourcing that constructs their agency at any level.

To strengthen the organisational capacity to deliver change the school must recognise the special conditions of knowledge and create an atmosphere of trust that sustains teachers’ commitments to a culture of enquiry, as Clement and Vandenberghe (2000, p. 86) argue, “The taking of risks, the development of creativity and the engagement in innovations should be stimulated.” Something of a cultural shift has occurred during the four years of this study at our
school in that teachers are being invited to develop work that will better ‘engage’ the students, particularly at the Year 10 level, where previously teachers and through them the students, were expected to submit to a regime of external accountability centrally defined in mandated state-wide outcomes. This is the psycho-social context of this research.

The study documents conversational interviews with teachers and the tensions and interactions between the public and private modes of social experience and the psychological spaces in teachers’ on-going identity formation. I initially interviewed eight science teachers, and used four of these as my study focus. Those four were formally interviewed as collaborators in the research three times individually and once as a group over the four-year period.
CHAPTER TWO

The Context: Science Faculty Development and Appraisal
Chapter 2

The Context - Science Faculty Development and Appraisal

The purpose of this project was to investigate the solo and collaborative character of faculty development and to assess policies that may stimulate sharing of and insights from PD in the science department at a secondary College. The science staff at this particular school, as in many schools, is often seen as a well-knit close community of teachers, yet there are problems in sharing of work including PD.

How teachers communicate with and learn from each other is of particular interest to the author. As an experienced teacher, I have noticed colleagues becoming less enthusiastic about their teaching. In particular, I have noted teachers in mid-career have a tendency to prefer not to teach Science. These Science teachers seem to experience different demands and have different professional development needs from their colleagues in early years of teaching as well as teachers of other learning areas. These needs appear to be more technical in terms of keeping up with developments in their field and techniques for teaching new content.

There has been little research into the professional development of a science department in Australia. The work done so far seems to have focussed on the use of technologies in the classroom (Williamson 1997, Barker 1999) and looked at the professional standards for teachers of science (Wright & Althorp 1998). A number of studies referred to mentoring in the workplace usually within existing social structures (Smart 1998) and the benefits of
reflective practice (Farrell 1998; Reid 1997) associated with action-research projects, whilst others have pointed to the need for different approaches to professional development (McCulla 1998) which emphasise the social relations of Science teaching.

Science staff need to keep abreast of changes in the fields of science. Without regular, effective professional development (PD) this is difficult and very frustrating. The value of an effective reporting and recording system of professional development is undeniable, yet there needs to be some time allowed to do the actual reporting, since it is very time-consuming. As Schwab (1984) shows, science curriculum development and improved teaching assumes the agency of teachers. Its four commonplaces – the students, the milieu, the discipline and the teacher must all be represented in the discussion in various ways, but the teachers are central.

Teachers need to have some input into the type of professional development they do. Whether this involves discussion with the local Professional Development Coordinator or involves a more involved professional development plan that is adhered to effectively is a matter of personal judgement. Much research reports the value of teacher professional development from a post-modern psychological perspective as a private quest and reflective experience.

The stance taken in such research is that what one teacher gets out of the professional development they are funded to undertake and that they see as useful is unlikely to be meaningful to another teacher. Other research grounded in social theory sees teaching and professional development to be both a social act to be understood through collaborative ethnography.
If social structures, individual agency and active communication in the Science department are all implicated in determining the value of professional development, there should be a way of recording and reporting to colleagues ideas about better science teaching developed and owned by staff.

This research grew from an initial inquiry into the feasibility of implementing a PD portfolio program in the Science department at Bangarra Secondary College with a view to fostering curriculum reform and improvement in teaching (Allan, 2000). PD portfolios have been proposed as a useful tool in the processes of faculty development and appraisal, as well as a ‘technology of self’ (Foucault, 1988). But to be effective it is assumed the portfolio entries are written with the purpose of communication. It is important that both what the author has felt to be important insights and the writing be reflective rather than prescriptive in style.

It was assumed at the outset that if staff are given ‘time’, that is, their job redefined, to work on this type of documentation and communication as part of a strategy of institutional learning, then they would feel more comfortable with the use of portfolios on a regular basis. Further, it was assumed that for the reporting on PD experiences to be effective, both written and verbal reports are likely to be used.

Teacher collegiality and faculty development may improve as a result of the use of portfolios, as peer mentoring is encouraged throughout the whole process. Portfolio writing may even be described as a professional development activity, for it enables the teacher to reflect on experiences gaining knowledge throughout the process: the planning, the development, the
collaboration and mentoring, and the reflection. In this way it was hoped that the authority of the experience of the teachers may be heard over the authority of reason (social necessity) and the authority of position in the generic solutions found in common professional development activities in the school.

The use of portfolios as a means of facilitating professional development needs to take into consideration the interactions occurring within the Science department as well as the school setting. Experienced teachers may become invigorated and refreshed by the reflection process. However the professional development needs of individual staff are not likely to be met simply as a result of teachers writing portfolios. The process and product are likely to become trivialised as a mere collection of what one does, unless the portfolio writing is a vehicle for a collaborative purpose recognised and sustained within and outside the Science department.

It was assumed initially that if individuals develop a portfolio around their professional development, it could then be shared with others, thus enabling others to benefit from the PD of that individual. It was further assumed that the development of portfolios in a department where apprehension rather than trust was the norm, and professional dialogue was almost non-existent that problems would be encountered in its implementation. Portfolios take quite considerable time to develop (Burke, 1997; Lyons, 1998) and such committed time is only likely to be voluntarily given if the teacher feels it will benefit them or their classes directly (Hargreaves, 1990).
The research setting at Bangarra Secondary College

Bangarra Secondary College is a large rural government secondary school, with over 1100 students from Years 7 to 12 at the time of the research. The school was formed from a forced amalgamation of the local High School and Secondary College (previously the Technical School) in 1995. The College is a dual-campus school, with approximately 78 full-time staff. There are about 12 teachers of science, but as in many schools in Victoria, many of these teach in other learning areas predominantly maths, as well as physical education, home economics, health and art. There are two science areas: one at the Junior campus (Year 7-9) and Senior campus (Years 10-12).

At Bangarra most staff are required to teach on both sites, so travelling between them is an everyday occurrence. Communication between members of the faculty is sometimes difficult, and many only catch up at faculty or staff meetings, where there is limited time to confer with colleagues. Individual staff would not necessarily have seen this collectively as a priority in their work. Each teacher typically has a number of professional personae. As Hargreaves (1995, p. 16) stated in the quest for professional identity and recognition, “Workplaces can make staff feel appreciated or undervalued, supported or ignored.”

Professional development is seen as an integral part of the individual teacher’s responsibility. Professional development seems to be a private matter (Little, 1993; Wood, 1992) and although schools have expended a lot of money in recent years on individual PD, little information is filtered back to the rest of the relevant faculty or school. The State Department
of Education expects teachers to participate in worthwhile PD and yet little provision if any has been made for reporting back to others or even finding out whether the PD actually was worthwhile or effective. PD has been regarded as a rare time-away reward, a private matter associated with the personal needs of a teacher.

In 1999 and subsequent years, the school paid for the individual teacher’s professional development costs up to a maximum of $220. This amount was to include travel, accommodation, registration and casual replacement teacher cover if required. The College also allowed teachers two days for professional development release. The school sometimes allows further professional development activities for individuals if it is for VCE (Victorian Certificate of Education) or CSF (Curriculum Standards Framework) related outcomes that the school has to comply with. Some staff members appear to get to more PD than others. Some staff are able to go on PD activities for a whole week. There have been instances when staff have wanted to go on special PD that has come up, but they were not allowed to go because they had already used their two-day allocation.

The government funding policy accompanies a requirement introduced in 1997 that all teachers in government schools present to the Principal a “Professional Recognition Program” (PRP) as part of their annual appraisal program. That plan includes the teacher’s goals at least for the next year, and the types of professional development the teacher would like so they may develop the required skills or objectives they identified as necessary to enhance student learning. Consistent with government guidelines assistance with the allocation of school budget funding of the PD that individuals undertake, the PD Coordinator at the College asked that staff
be accountable for their PD by effectively reporting their activities. The PD Coordinator had found that prior to 1997 this rarely occurred.

Major budget investment has been made in whole-school in-service programs. Whole-school professional development programs offered by the College have tended to be ad hoc and generic in nature. Presenters have tried to solve our problems without ever finding out what our problems were. Proposed solutions have usually been based on the presenter’s own experiences.

In the Science-Maths areas of the College the major conferences organised by the MAV (Mathematical Association of Victoria) and the STAV (Science Teachers Association of Victoria) are at the end of the year. Many of the science staff members teach in both areas, yet are permitted to only go to one conference annually. Even then there is a limit on the number of staff allowed to go (a school-imposed limit, usually 4-5 for the annual conference of STAV and 5-6 for the conference of the MAV). An overview of this study can be found in Appendix A, which includes the timeline over the four-year period of this study.

**Preliminary Study of the Usefulness of PD**

In a preliminary study at Bangarra in 1998 the whole staff was surveyed about the professional development activities they wanted. Details of this survey and some analysis of the same can be found in Appendices B-1 through to B-5. Most staff indicated they wanted PD activities that were going to be useful to them in the classroom, which they could use directly, and which
made them reflect on what they were doing. Some wanted up-to-date and presenters who could motivate them and get their ‘spark re-ignited’.

It was not surprising that many of the staff noted that having to go to good PD usually meant travelling to the City four hours away, and that was seen as very disruptive. To spend up to eight hours travelling time for a seminar that may only be for two hours seems difficult to justify. Yet many preferred the end-of-year conference (STAVCON – the Science Teachers Association of Victoria annual Conference), as it was over a two-day period and allowed an opportunity for the participants to network with peers on an informal basis.

The science staff as a faculty indicated very similar needs and aspirations, with subject-specific needs a high priority. The Science staff were given a separate questionnaire and details of which can be found in Appendix C-1. One of the problems that came out was that Science might seem more difficult to teach than Maths. It seemed the longer teachers taught, the less enthusiastic they were for teaching Science which involved keeping more up-to-date, as well as having practical work and generally busier classes. Courses in Science seemed to be more difficult to come to terms with than was the case with other KLA’s (Key Learning Areas). And so, if a staff member was also qualified to teach Maths, they started to volunteer for it in preference to teaching Science.

Some of the problem described seemed to be specific to the restructuring at Bangarra. We had some problems with the buildings and the facilities that did not help morale. There were rooms with no heating and inefficient cooling, not enough chairs each lesson (they got swapped from
room to room on a needs basis) and so on. Being spread over two sites was also a big issue in reducing opportunity for spontaneous discussion. Many of the staff either said or inferred that time was their most precious commodity.

A number of comments, positive in the direction of the study, indicated that reflection and communication were important in improving one’s teaching:

“We need time to reflect on what we have done and where we are going.”

“There does need to be (more communication), but the main thing is the time...the timing of it (faculty meetings) is not congenial to that sort of sharing.”

“Because we are a big school and...on two sites we often don’t come across each other... we were getting to a stage where we were actually isolating ourselves... I think we are improving, but I think we’ve still got a fair way to go...before we are really working as a team and sharing a lot of resources and things like that.”

“If you only ever had time to share the knowledge!! And that’s the really hard part. One meeting a fortnight with the faculty after school when you are already zapped, it is a difficult time to actually share stuff. When you do come home (from a PD activity), you are often so full of enthusiasm and overflowing that you want to tell people about what you did.”

Regarding the attributes of useful PD, a number of comments of portfolio reporting on PD indicated that the study I was planning would contribute to change in the right direction:

“PD can actually enthuse you again for what you are doing in the classroom. It can give you new ideas, and keep you up-to-date with new ideas. Sometimes curriculum ideas, sometimes actual experiments you can do.”

“It’s actually from demonstrating and doing it that people pick up that enthusiasm and begin to see some of the ways that they could use it for their own kids.”

“Always I want to be able to take something back to class...something that I haven’t already been doing, or that I’ve been doing a slightly different way that would make it easier to get the material across to the kids.”
"I find going to see inspirational people really gives you a buzz and it lifts you up and makes you enthusiastic yourself to go and find some more things."

"It did make me enthusiastic. It reaffirmed my belief that kids intrinsically love science..."

"...(PD has) given me some new ideas in the way of understanding things that are going on in the world around us... so that I'm still fresh."

"Some of the best PD is directed towards the classroom. It has to impact on the kids. It has to impact on my teaching..."

A number of staff had concerns about the State mandated Curriculum Standards Framework (CSF), and felt that it was difficult to fit so much in a course and cover it adequately. It was seen as difficult to cater for all students, and possibly a thematic or context approach would be useful, but then that seemed not to cover all aspects of the CSF adequately. One comment made in passing by a staff member suggested that maybe this science department is being “too tied” to the CSF and perhaps we should try to be more flexible in our approach.

The following comments related to some of the problems of characterising PD as collegial or solo and the value of theoretically grounded whole-school PD:

"Sometimes it (PD) can be on a topic that you are not actually doing at the moment so you put it away and you never remember to get it out to actually do it. So often, actually making the effort to actually get there, and then coming back and being again mentally immersed in your on-going work and probably some extra things that have probably happened because of you being away; you tend to not use it as maybe as valuably as you maybe you could."

"... I think the last PD we had on the size of the brain and stuff was completely and utterly useless and a waste of my time. And I think that if people are going to have stuff like that teachers think are a complete waste of time then it (the PD) has less participation, but I do think, from previous experiences that it can be beneficial to get together to discuss and share resources."
"...in some of these cases it (the PD) professes to give something, but may be just a brainstorming session and not what you want at all. You are asked to provide the ideas on how it could be done.... It was not what I expected it to be."

"I think some of the PD I have been to can be a bit insulting to teachers...Well a lot of the PD I’ve been to, particularly here, when they try to tell us how we should approach the multiple intelligences of the student, how we can get them to be creative thinkers, how we can get them to do this, that and the other. It is so airy-fairy it doesn’t address the real problems we have in the classroom..."

Additional comments can be found in Appendix C-2.

One thing that became quite obvious in the conversations and reaffirmed from the author’s knowledge of the staff being interviewed is that teachers’ personal practical theory about the nature of teaching, learning and disciplinary knowledge profoundly affect their classroom teaching (Clandinin & Connolly, 1996; Prawat, 1996). They knew that they had different needs from each other, yet they were quite adamant that the main benefit from their PD was to improve or enhance their own classroom teaching. They saw their teaching as socially positioned by the community and the school but valued their own self-cultivation. That paradox seemed central to the identity formation of teachers and explicable only through an understanding of their biographies and membership of a community of discourse in which they aspired to teach.
CHAPTER THREE

Literature Review
Chapter 3

Literature Review

Professional development and In-Service Education

To be effective, professional development should offer the teacher an intellectual challenge, and take into account the fact that teachers are inherently different in their backgrounds, experiences and needs. Shanker (1996, p223) argues that professional development:

“must offer serious intellectual content, take explicit account of the various contexts of teaching and experiences of teachers, offer support for informed dissent, be ongoing and embedded in the purposes and practices of schooling, help teachers to change within an environment that is often hostile to change, and involve teachers in defining the purposes and activities that take place in the name of professional development.”

It has been suggested that staff in a program of effective PD may enjoy their teaching more (Wood, 1992; Little 1993) by overcoming the profound sense of isolation that often affects secondary school teachers more than primary school teachers; and with particular reference to a Science department should both improve student and staff engagement of Science as a field of study (Grossman & Stodolsky, 1995).

In the science faculty concerned in the study all but one of the staff had been teaching for at least thirteen years. Wood (1992) particularly felt that experienced teachers such as those involved in this study, needed time to reflect on their teaching and take control of their professional development. Towards this end, the author proposed to her colleagues that a PD
portfolio policy might facilitate and support faculty development (Shulman, 1998; Shanker, 1996; Wolf, 1996) by supporting staffroom discussion of good teaching practices.

It has been noticed that much of the money allocated to professional development of teachers in schools does not give teachers adequate opportunity to learn or to find local solutions but rather goes to packaged programs of “standardised solutions to the problems of best practice” (Little, 1993, p.133). For many teachers professional development encompasses in-services, workshops, extended courses, conferences, school visits, network meetings and reading of journals to name just a few activities. Many of the activities staff are expected to take part in are not of their choosing, and may be one-off activities of perceived importance in broadening the academic insight of staff such as ‘multiple intelligences in the classroom’. Feedback and follow-up is typically relatively non-existent.

Science staff in this and other studies have consistently expressed an interest in professional development that would enhance their teaching of science concepts and make presentation more interesting, relevant and engaging for the students.

Burke (1997) describes professional development as a lifelong process whereby an individual strives to deepen their knowledge base, improve skills, sharpen judgement, keep abreast of current developments, and experiment with innovations that may improve one’s practice and that of one’s colleagues. Bellanca (1995) has defined individual professional development as a commitment or a decision to expand one’s repertoire of knowledge of skills.
Lieberman and Miller (1990) prefer to use the term ‘teacher development’ in an institutional context when they talk about professional growth activities and refer to it as “continuous inquiry into practice” in a school with a “culture of inquiry”. They see the teacher as a reflective practitioner, someone who “has a tacit knowledge base and who then builds on that knowledge base through ongoing inquiry and analysis, continually thinking and re-evaluating values and practices” (Lieberman & Miller, 1990, p107)

Burke (1997) argues that although many people use the terms ‘professional development’ and ‘staff development’ interchangeably; staff development or “in-service” as it is now practised does not encompass the long-term application and transfer of knowledge that professional development offers. Staff development usually comes down to one-shot in-service days strategically placed (Burke, 1997; Sykes 1996) primarily to meet an administractive agenda of the State or school.

Many staff express annoyance with current experiences of mandated PD or staff development and comments such as ‘What a waste of time’, or ‘We’ve done that before’ are frequently heard. As Burke (1997, p4) states, “the very mention of staff development conveys the impression of something done to teachers and to students rather than something done by teachers for students”.

Sykes (1996, p466) notes, “A great deal of in-service training is profitably devoted to transmitting knowledge and skills of various kinds. When this is done well, teachers are appreciative.” However, teachers have to conform to reform demands in many contexts, such
as CSF 2000, the ‘new’ VCE, school restructuring and the like. “Teachers are frequently the targets of reform, yet they exert relatively little control over professional development” (Sykes, 1996, p463). Reform demands are often frustrating for teachers particularly where the rationale is less than convincing, vague and poorly resourced. The process of reform needs reforming to achieve better ongoing teacher learning (Little, 1993; Sykes 1996).

It has been claimed (Oldroyd & Hall 1997) that the needs and priorities for professional development should take into account the needs of individuals, groups and the whole school, as well as the need for compliance with government policies. (Grossman and Stodolsky, 1995) suggest that the needs of the subject department as a group of individuals in a school should be identified. These needs should include current strengths and weaknesses, priorities arising from needs, what types of programs and follow-through support might meet these priorities, and how to implement and evaluate such activities. Teachers of a specific department share a common arena for practice, though they may differ in their specific interpretations of the subject. They will have shared a subject sub-culture (beliefs and norms); and as such particular issues and policies that teachers view as problematic may vary, depending on which department the teachers belong to. Teachers’ perceptions of subject matter also mediate their response to curriculum reform proposals, as is the case in this study.

It is the Subject Department as a cadre of teachers that constitutes the primary point of reference or professional home for most secondary teachers. It is the place where professional friendships and final decisions of curriculum are made, and “it is the department which is the singular entity that most predictably unites teachers with one another, and most deeply divides
faculty groups from one another" (Siskin 1995, p7). Subject departments are also where the "professional lives of teachers intersect and overlap in ways that are both powerful and problematic" (Siskin, 1995, p17).

Professional development efforts must be sensitive to how different orientations towards subject matter may affect teachers’ responses to new instructional or curricular practices. Many PD activities do not take into account the expertise, needs of or the type of person involved: “Generic treatments of reform efforts at the secondary level may allow teachers to disengage, if they believe that their subject matter is somehow exempt…” (Grossman & Stodolsky 1995, p10).

Bernhardt (1994) concluded that some of the most effective professional development is the result of cadres of teachers working together, making decisions, analysing and using data, planning curricula, monitoring student achievement and evaluating the effectiveness of the new approaches. A science faculty could be seen as one of the cadres of teachers, and as such professional development within the group could be expected to be more effective than generic whole-school processes. When groups of people work together on shared problems, communication and reflection should enhance what they are doing.

Little (1993) argues that one of the best types of professional development is one of participation in special institutions or centres, as they offer substantive depth and focus, adequate time to grapple with ideas and materials, and give the sense of doing real work, rather than being ‘talked at’ as well as the opportunity to consult with peers and experts.
Unfortunately participation in special programs is often restricted and the reporting of such activities is practically non-existent and so only individuals or a minority of staff rather than the faculty at large can benefit in a direct sense.

Teachers undertake professional development for many reasons. Some choose not to take part regularly. Teachers’ reasons and opportunities for professional development depend on what the teacher is teaching at the time, the time available for professional development, and other day-to-day work conditions and other personal commitments. While Little (1993, p141) suggests, “We will be better served by knowing the grounds on which teachers choose to participate or not”, professional development practice remains, on the whole, highly individualistic. Teachers with similar teaching loads and experience may show quite different commitments to participation. A shift to school-based initiatives does not necessarily alter the pattern of participation or individual practice.

**Communication and Meaning**

Professional development traditionally is felt to be a private affair, but to ‘show and tell’ one’s considerable individual expertise, experience and reflections with others has often been felt to be a valuable learning experience for all concerned. Wood (1992) felt that experienced teachers need time to reflect on their profound identity as teachers and take control of their professional development. She found that if teachers carefully examine their own practices with a ‘significant other’, then those practices are likely to improve. Staff with a program of effective PD may enjoy their teaching more (Little, 1993; Wood, 1992), and in fact the overall standing of a department within a school community could be enhanced (Grossman &
Stodolsky, 1995) by such collective capacity. The need for teachers to reflect upon and share their experiences if implementation of change is to be successful has been documented by a number of researchers (Wood, 1992; Atkin, 1991; Elbaz-Luwisch, 1997).

Wood (1992) developed a program in her school using autobiographical narratives by teachers in which they volunteered to talk to her about their own teaching and learning experiences, and to identify the gap that they felt had developed between their hopes ideals with their actual daily practices and to take decisive action on these. It shifted the “locus of control of professional development to the teacher” (Wood, 1992, p538). She used narratives so that the teachers’ voice is heard, and so that teachers’ insights and experiences could be included. If teachers can tell a story from their own experience, interpret it, and discover a theme for their teaching, they are more likely to direct their own development as a professional. Teachers working closely with a critical friend or colleagues find that the knowledge they share is valuable and a great resource. The use of a journal to keep a focus on the experiences gained was identified as being valuable (Wood, 1992).

Little (1990) emphasises the attractiveness and also the indeterminacy of collegiality. Although teachers’ collaborations sometimes serve the purposes of well-conceived change, she warns the assumed link between increased collegial contact and improvement-orientated change does not seem to be warranted: “closely bound groups are instruments for both promoting change and for conserving the present” (Little, 1990, p509).
Teachers seem often to work in isolation and it is important that teachers be able to spend time together. "Teachers used to working in the 'hermetically sealed classroom' often welcome the support from colleagues and will work together to achieve a common goal" (Burke 1997, p21). Very few teachers really know how other teachers teach. However, teachers may be reluctant in seeking help, because it may be construed as not being competent. Little (1990, p516) states that "Teachers may show little inclination to engage with peers around matters of curriculum and instruction if doing so can only be managed in ways that may jeopardise self-esteem and professional standing." In casual exchanges, teachers may offer reassurance that confirms current practice without evaluating its worth.

Lieberman & Miller found in successful Professional Development Schools in the USA, that if teachers are able to talk about what they are doing and work to find solutions for commonly defined problems, then the life of the teachers in the school can be transformed: "Traditions of privacy, practicality, and isolation were replaced by shared ownership of issues, a willingness to consider alternative explanations for practices and behaviours and a desire to work together as colleagues" (Lieberman & Miller, 1990, p108).

Sharing of resources and ideas is also worthwhile, though Little (1990, p522) warns that some teachers will share more than others and teachers have described "the painstaking accumulation of an individual store of resources that may be diminished, depleted, or compromised when revealed to others". This could be a problem in a science department where members work closely together, and could create unnecessary stresses. Joint work may enable a sharing of responsibility for the work of teaching, and allows teachers to engage in
direct commentary on the moral, intellectual and technical merit of classroom practices and school level policies, but problems may arise where commitments and responsibility is not shared. Generally however, “Teachers both accept and expect initiative on matters of professional principle and craft” (Little, 1990, p522).

**Teacher-written Portfolios as a vehicle for Faculty Development**

There are many types of Professional Development programs available to teachers (Burke 1997), and one of these is the use of portfolios to record and reflect the teachers’ experiences of their professional development. Wolf (1996, p34) states, “When carefully conceived, portfolios can significantly advance a teacher’s professional growth. They can also ensure that evidence of exemplary teaching doesn’t vanish without a trace”.

Teaching portfolios in education have been an evidence-based documentation associated with an advanced level of accreditation (Shulman, 1998). In this parlance the new meaning to the term portfolio as a verb is given describing it as “the dynamic process of teachers documenting the evidence of their work and growth, gathered and authored by them through careful reflection, shared with colleagues and students, and presented for public discussion and debate about their conceptions of good teaching” (Lyons, 1998,pvii). Portfolios are associated with the development of a new professionalism in teaching and teaching appraisal in the United States. Shulman (1998) indicates he was responsible for the use of portfolios by teachers when he was trying to find a more useful method of teacher assessment than the
National Teachers Examination and classroom observation which were both used in the USA. Neither of these methods assessed teachers’ pedagogical content knowledge.

The use of “portfolios” has its origin with the plan to have teachers document their work and enable them to reflect critically on their teaching and the conditions pertaining to it. The term carries artistic as well as market associations in public discourse. Green & O’Sullivan (1996) and Burke (1997) have identified a number of recognised functions for portfolios in education, ranging from the employment or pre-service portfolio, the evaluation or action-research portfolio, the career portfolio and the professional development portfolio.

For many years, educators have used student portfolios to assess student performance and to capture evidence of growth and development over time. Portfolios show a dimension of the students’ learning that is not found in traditional and standardised tests. Burke (1997, p1) comments, “The portfolio is more personalised, allowing choice and encouraging reflection.” This view of portfolios can easily be transferred to the use of portfolios by teachers. Portfolios are mentioned as a management tool in the Professional Recognition Program for Victorian teachers. This in itself has produced resistance amongst teachers for their implementation.

Freidus (1998) claims that construction of portfolios to document professional development engages teachers in an open-ended process that pushes them to revisit their knowledge and express it in personally meaningful ways. As a result of the reflection professional development itself occurs. Shulman (1998, p32) asserts, “Portfolios that include written cases and go beyond an individual episode offer extraordinary potential for critical reflection and
for creative use as a central tool of supervision”. Reflection is seen as one of the most critical means of development of an individual or even a whole faculty. Teaching portfolios provide a means to “document teaching, to showcase excellence in teaching, to emphasise that teaching is paramount to the mission of …education, and to motivate faculty development” (Murray 1995, p13). Again there is the argument for portfolios as a possible means of professionally developing faculties through reflective processes.

Many researchers have found that the use of portfolios by teachers is a powerful tool especially as a personal, reflective learning experience. However, they also warn that the use of portfolios have some inherent dangers; in “trivialisation as well as mindless standardisation” (Lyons 1998, p5), and as “a mere exhibition” or even “misrepresentation” of teachers’ work (Shulman 1998). One of the dangers here is that teachers merely collect pieces of work, or artifacts, without any real reason other than to collect to make up a portfolio.

The trivialisation mentioned refers to the documenting of things that are not worth reflecting on. Another problem with portfolios is that they take a long time to build up to be worthwhile. Shulman (1998) refers to this as “heavy lifting” when teaching itself is so time-consuming and questions the demands of time made by portfolios. The misrepresentation of teacher’s work refers to the fact that usually only the best work is included in a portfolio, and again a question could be asked if they are used in formal appraisal or in advanced accreditation of some type. These management processes in preferred recognition are becoming more common.
Peer mentoring has been proposed by a number of researchers as the backbone in constructing trust and accountability in institutions. It has been suggested that the critical friend or mentor plays an important part in the professional growth of an individual. (Burke 1997; Wood 1992; Shulman 1998). Portfolios provide a simple organisational tool for self-reflection and interaction with colleagues based on documented episodes of their own teaching. The development of portfolios “should be an ongoing process conducted in the company of mentors and colleagues”(Wolf 1996, p34). Interactions and collaborations amongst peers may prove invaluable, but may be highly problematic (Little 1990; Zellermeyer 1997) requiring established trust.

It is acknowledged that the development of portfolios is a time-consuming exercise (Burke 1997; Shanker 1998; Shulman 1998) that must be justified. The portfolio presentation may have a value as professional development. Focusing on a particular critical incident in a teacher’s life with respect to professional development experiences or needs should enable recognition of development as an individual teacher. Yet Tripp (1994) questions whether this type of procedure akin to a personal diary with an expectation of frankness can be used in public for appraisal.

If the sole purpose of a professional development portfolio is self-evaluation, teachers have the freedom to structure their portfolio in an individual and personal way (Green & O’Sullivan 1996) to serve their purposes at the time, but an ongoing feedback loop with trusted colleagues may be essential for their institutional use and success. The research reported here is formed around the functional ethical principles associated with the introduction of a portfolio form of PD reporting.
CHAPTER FOUR

Methodology
Chapter 4

Methodology

This research is in the hermeneutic phenomenological tradition (Zellermeyer, 1997) specifically in discursive psychology (Harre, 1999). The study began as an investigation of the perceived value of the use of portfolios for faculty development to firstly record professional development experiences and reflection on the understanding gained from such experiences and secondly as a means of improving communication within a science department. The following orienting questions were asked of the science teaching staff at the College:

- What is considered effective/ineffective PD?
- How do staff use PD in their own professional development?
- How do staff identify their PD needs?
- In what way do staff communicate their PD to colleagues?

As a background to the study of the professional development experience of the science faculty, a general staff survey was conducted to gain information from all staff in the school about the types of PD individual staff seek for themselves and consider effective. This data is reported in Appendices A-1 to A-5.

A mini-survey of the science faculty followed, where staff were asked to relate how their favourite teacher had influenced them, how as a teacher a positive or negative classroom incident had affected them, their greatest successes and challenges, and the types of PD that they would like to explore to improve their practice. The purpose of this was to open
conversation amongst the science staff who were generally in ‘mid-career’ phase about their professional needs as teachers reflecting on their experiences of professional development programs. A summary report is presented in Appendix C-1 with sample comments given in Appendix C-2.

It should be noted here that eight staff were initially interviewed for the major study, but only four staff were used for follow-up interviews due to end-of-year time constraints. There were four stages or phases of interviews conducted.

- The first stage, the initial interviews, were conducted as an introduction to the staff member and to gain some insight as to the needs for PD and the expectations of PD by each individual. The Curriculum Standards Framework (CSF) had not long been introduced and it was recognised that some work on our courses had to be done to encompass those changes. The initial interview took place in May 1999.

- The second stage was conducted after each staff member, including myself as the researcher, had participated in an extended professional development program over a period of six weeks, and to further glean from each individual the success or otherwise of that PD program. At this stage a focus group of four of the original staff were chosen due to their availability at the time, and the likelihood of them remaining in this school in the foreseeable future.

- The third phase of interviews was conducted twelve months after the second interview and its purpose was to find out how each individual was proceeding with their PD and how they may have used what they had learned from PD activities. It was to be noted what needs and expectations may have changed in that time.
• The final phase involved a group interview when all four participants and myself met to discuss the progress of this research. Again due to the problems of getting all individuals ‘free’ at the same time meant that we had to meet of the second last day of the school year. The meeting had been postponed on four occasions when last-minute problems of getting the members together as a group arose. I am sure the feeling amongst the group was that they may have had other things they could be doing to occupy their time at this time of year, but I was grateful that they did in fact wish to meet to finalise the interviews. CSF II was being introduced at this stage and again some further work was required to amend changes in the teaching and delivery of our units of work. Details of this final group conversation, including the actual conversation can be found in Appendix E.

Conversations (interviews) were conducted and recorded on audiotape. Although all who were approached were willing to be taped, logistics proved a problem. Finding the time when both the interviewee and I were free proved difficult. Some even refused to use CRT (casual replacement teacher) coverage even though that was made available, since they preferred to teach their own class. Leaving extras is always a hassle. All interviewees indicated they were willing to have follow-up interviews as required.

The science staff as a department was encouraged to take part in the S.E.T. (Science, Engineering, Technology – a State education department initiative) extended school-based PD program organised by Monash University, in which a method of reporting using ‘portfolios’ was trialled. The staff interviewed were asked to ascertain the value of the program, how they had used it in class, and how they rated the solo and collaborative aspects of professional experience in their daily work. Details of the S.E.T. PD and how it was used in this study can
be found in Appendices C-3 and subsequently C-4 and C-5, which show what staff were given to assist in their ‘reporting’ of PD.

The staff were encouraged to participate in the extended PD program, since it was the only real PD that they had a chance to participate in since this research project began. They were asked to report on four of the sessions they had participated in, which I felt a reasonable request at the time. They were asked to record their impressions of the session, what they had learned, and how they felt they could use it in class. In fact, the staff were also asked to prepare a lesson plan or something similar around the PD activity, and to use it in class, and then record how it went (refer to Appendix B-3 and B-4). In hindsight, I probably would not have asked them to do quite so much since it seemed to many to be quite a formidable task.

The pro-forma (Appendix B-3) was prepared to assist staff in recording their experiences. This was created when asked, “What do you want exactly?” and even when being told that there was no correct response required and that each individual would probably do something different, there were still a few reservations about doing such a report. This may be where the term “portfolio” became a bit confused, since some felt that a book was expected! The staff were familiar with the Professional Recognition Program and had either developed ‘portfolios’ of evidence to justify their positions or status in the school or had seen other’s examples of portfolios and were possibly a little hesitant at producing something similar for a professional development activity.
The intent here was to familiarise and introduce staff in collecting information; using what they had learned and then reflecting on how it had gone. Although this seemed a logical and reasonable thing to do, the problems encountered were significant. Some of the staff taking part in the extended PD program did not bother to revisit the pro-forma sheets in the weeks whilst the program was on, but when it was finished and they were attempting to prepare their ‘portfolios’ they felt that they had forgotten some of the finer points about the activities.

The significance of workplace conversation in the professional identity formation of the teachers was a central aspect to the study. Positioning theory may act as an analytic tool in the interpretation of dialogues between staff and the researcher. This investigation deals with the solo and collective nature of professional formation and transformation in a science department as revealed in their responses to professional development activities. The portfolios were explored as a means and an end in understanding faculty development.

**Collaborative research**

The stance taken in this research was that one cannot assume that educational policies can be implemented without the active cooperation of teachers, and one must recognise that teacher cooperation is necessary for implementation of policies as well as developing them and assessing their impact. Wagner (1997) describes three types of researcher-practitioner cooperation in research. He argues that individual research projects may resemble one type, more or less, or may even include all three. The three forms as they may seem to apply to this research are shown below in Figure 2.
In this respect a co-learning agreement between the staff interviewed and the colleague-researcher were sought, but aspects of all three of Wagner's modes of research were present.

**Figure 2**: Three types of agreement between researcher-practitioner in research (adapted from Wagner, 1997, p17)

<table>
<thead>
<tr>
<th>Focal research question</th>
<th>Data extraction agreement</th>
<th>Clinical Partnerships</th>
<th>Co-learning agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Is professional development a solo or collegial enterprise?</td>
<td>How can practitioners and a researcher work together to generate greater benefit from PD in a science department?</td>
<td>What is the nature of teaching and professional development? Is a teacher's cultural agency individual or collective?</td>
</tr>
<tr>
<td>Research process</td>
<td>Direct, systematic inquiry designed, conducted, and reported by the researcher</td>
<td>Systematic inquiry, cooperatively designed and reported by researcher and practitioner</td>
<td>Reflexive, systematic inquiry, stimulated in part by ongoing collegial communication between researchers and practitioners.</td>
</tr>
<tr>
<td>Context and stance</td>
<td>Researcher is an outsider and engaged in reflection; practitioners are insiders and engaged in action</td>
<td>Researcher is an outsider and engaged in reflection; practitioners are insiders and engaged in action and reflection</td>
<td>Researchers and practitioners both participate through action and reflection in processes of teaching and professional development.</td>
</tr>
<tr>
<td>Model of change</td>
<td>Knowledge generated through research can inform educational policy and contribute to improved instruction</td>
<td>Researchers and practitioners conduct cooperative research on problems of practice to help practitioners improve their own effectiveness.</td>
<td>Drawing on knowledge gained through cooperative research, researchers and practitioners are responsible for initiating complementary changes in their own institutions.</td>
</tr>
<tr>
<td>Expert roles</td>
<td>Researcher as researcher; practitioner as practitioner</td>
<td>Researcher as researcher and collaborator; practitioner as practitioner and collaborator</td>
<td>Researcher as researcher-practitioner and practitioner as practitioner-researcher in their home institutions</td>
</tr>
</tbody>
</table>
Some writers argue that calls for teacher collaboration by classroom reformers and managers of institutions often amounts to nothing more than ‘contrived collegiality’. Collaboration may in some situations be more dangerous than traditional teaching as it “masks asymmetrical power relations” in the classroom (Zellermeyer, 1997, p187) and the school (Little, 1990; Hargreaves, 1994), but in this case the changes that occurred led the research away from the original focus on portfolio-based staffroom dialogues and indicates that significant power resided with the interviews.

It has been argued that the legitimacy of qualitative research cannot be automatically transferred to the research done by school practitioners. Anderson and Herr (1999, p13) maintain “school practitioners have a personal stake and substantial emotional investment in their projects. From the point of technical rationality, this has tended to disqualify their research.” Clearly practitioner research cannot be totally discredited on the basis of an ‘emotional investment’ or for that unwritten commitment that teachers bring to their work. However there is a risk in standing too close to teachers’ stories when claiming to present privileged data on the conditions of teaching and professional development in that the interests of students, or the institution or the community are neglected. Atkin (1991), Woods (1996) and others argue that the authority of teachers’ experience and their privileged knowledge counters any questions to the credibility of such research.

Although Anderson and Herr (1999) admit that what is missing from much educational research is the voice of the teacher, they argue that because teacher-researchers are ‘native’ to the setting, they have to work to see the taken-for-granted aspects of their practice from an
outsider's perspective. They suggest, "although practitioners have a wealth of tacit knowledge they do not have privileged access to truth" (Anderson & Herr, 1999, p15). This may clearly be contested in this research, since the teacher-researcher who personally knows and respects the teachers in the research is in a strong position to weigh competing truth claims of experience, logic or reason.

Practitioner-research does have advantages. As Wagner (1997, p17) reported, "By engaging practitioners in investigating their own schools, they can stimulate discourse within a school about alternatives to present or recommended practice". Working with others collaboratively and giving voice to the participants is a powerful use of narrative research. The process of working with the researcher may well be empowering in making public teachers' usually unsung stories of accomplishment. Elbaz-Luwisch (1997, p77) adds, "Educational practices can only be changed from the inside, by practitioners working together".

Atkin (1991) claims that if educational inquiry is to aid in educational improvement, then to answer their questions teachers will have to take research matters into their own hands. If portfolios or some other form of reporting of PD is to successfully promote faculty development, then staff who are going to use the method should be the ones who develop that method, and have some input into what format the research should take (Diamond, 1992). Most research has been conducted under the direction of academics, and their goals and methods are not necessarily owned by the schools where the results of the research are applied. Teachers have their own vision of themselves; "they want to be true to themselves, and they want to do things that help them feel they really are the professionals they want to
be” (Atkin, 1991, p386). However, a teacher’s vision of oneself is likely to change. Indeed it is teachers’ repositioning in their conversations about their professional development that is the focus of interpretation of PD activities as social episodes in the life of the teacher.

Woods (1996) also argues that in researching the art of teaching a group culture will often have a certain ambience or ethos which the researcher needs to grasp. The researcher needs to understand the symbolic meanings behind body language and language. A teacher-researcher is likely to have better access to understanding the ethos within a department. Hargreaves (1995, p16) also argues that the teachers ‘voices’ need to be “interpreted with reference to the contexts of teachers’ lives and work that give them meaning”, and I would argue that since this research was conducted by an insider, the meaning of much of what was said can be interpreted in the manner in which it was intended, based in previous and ongoing conversations.

While internal evaluators may be expected to know more about the program than someone from the outside, their closeness to the program could make it difficult for them to see the program from a wider perspective (O’Sullivan, 1995). Whilst a wider external perspective may be valuable, the teacher-researcher is more likely to take a wider internal perspective by having experienced some of the same problems and positives as the subjects of the study. They are likely to have known the staff concerned for many years, rather than a few visits of relatively short time, and this familiarity can put them in a more than adequately qualified position to report the staff feeling. As Woods (1996, p43) comments, “to understand the interaction under study, one must also understand the context within which it occurs”.

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Elbaz-Luwisch (1997, p78) commenting on the politics of narrative research warns that, “reflective teaching and school-based development, by themselves, will be as unsuccessful in bringing about sustained change in educational practice as were other top-down theoretically driven efforts.” The key purpose of narrative research is not to gain the solutions to a particular problem, but rather to gain some understanding of the problem, and to empower the participants in the process. It is the empowerment that in turn will bring about changes, but these changes cannot be foreseen, nor are they goals of narrative research.

Since narrative research makes use of personal materials, reflection is a necessary component. “Reflection brings the narrative researcher up against the edges of the work, and requires him or her to examine the context within which the research is carried out and its broader implications. Both the researcher and the teacher look at things they might not have noticed before” (Elbaz-Luwisch, 1997, p75). In the co-learning agreement reached between the researcher and her colleagues in this study, each will have some prior thoughts as to how this project will evolve, yet that may and in fact did change with responses which were cooperatively made.

The interpretative research proposed in this study involved three main stages. The first stage involved the author’s story about her location in the project, the research perspective and theoretical orientation of the study. The second stage involved the interpretation using positioning theory of the conversational interviews with the author and the four participating teachers, showing the teachers’ stories of their professional development experiences and how
they incorporated what they learned into their teaching. The third stage is the process of synthesis in the author’s interpretation of agency and community in professional development.

**Interactive Ethnography**

Aspects of this study fit Woods’ (1996) model of symbolic ‘interactionist’ research that he describes as interactive ethnography. The emphasis in symbolic interactionism for this study lies in the teachers’ construction of meanings and perspectives, their adaptation to circumstances, the management of the change in circumstances and experiences, which is common in all teaching situations. Woods suggests that the chief research instrument is the researcher and how she interacts with theory and method. “The researcher does not stand above or outside the research. The research is contextualised within situations and definitions of situation…the researcher’s self is inextricably bound up with the research” (Woods, 1996, p51).

In classical ethnography the researcher is not present when a critical event occurs then she cannot experience the emergent, unfolding process as it occurs. She would then not observe the triangulating force of her own observations. In Woods (1994) research, concern about the lack of first-hand observation was reduced since interactive collaboration was involved as a feature of this research into key educational experiences in teachers’ lives. Collaborative interviews and discussions were relied on to counteract any concern about authenticity.

Interactive ethnography involves a collaborative creation of meaning between the interviewer and the interviewee that takes into consideration the context of the lives of the teachers.
involved. Collaborative narrative accounts are narratives created within a relationship between the teacher and the researcher. As part of the process, the narrative is continually being transformed by the interaction of the teacher with the researcher (Thomas, 1997).

Tripp (1994) in reviewing research grounded in critical incidents in teachers' lives, found that knowing something about what had happened to someone and what they had done, told him something about who and where they were, and what they might become and where they might be going. Different teachers will respond in vastly different ways to a similar situation because they have a different biography, or life experience. To understand and improve one's teaching practices, it is important to understand the meaning behind certain critical incidents in one's teaching life. For this study, those 'critical incidents' mean key experiences or turning points, yet may appear of minor significance in one's whole teaching life since the focus is on professional development experiences. Hargreaves (1995, p17) comments that, "studying teachers' voices in different contexts tempers romance with realism." The longitudinal perspective of this study permitted me to observe each subjects' repositioning in different conversations and for teachers to reassess their interest in the research question.

Tripp offers some cautionary notes about the use of critical incidents, particularly relating to the 'politics of exposure'. He states, "It is not possible to separate people from their lives, and investigation of people's lives is necessarily the investigation of the people themselves" (Tripp, 1994, p75). He is here concerned about how and for what purpose information about subjects may be used. In this study the proximity to the researcher and the purpose of the workplace research reduced teachers' concerns.
Diamond (1992, p69) believes that narrative provides "both phenomenon and method for the re-emphasis of the personal meaning of what it means to teach and to do research." The researcher must be clearly identified within the research and the narrative so that the possibility of the teacher being misinterpreted is eliminated. The researcher and the researched must be embodied in the research. He suggests that the account must be presented in a ‘dialogical and dialectical form’ as a conversation between the researcher and the researched.

**Research Interviews**

The conversational interviews in this study were conducted on a modified version of that designed by Wood (1992). The steps I adopted were:

1. initial interview, during which the teacher recounts a critical incident or particular memory of his/her teaching or learning experience relating to professional development.
2. a transcription of the interview
3. a collaborative interpretation of that narrative to discover a continuing challenge or theme in the teacher's professional life. The researcher offered insights as appropriate to a conversational interview.
4. reflection by the teacher on the story and its theme, and the eventual selection of professional goals based on insights that have arisen from that reflection. Also here I included responses of students that had occurred in the classroom.
5. a second interview, to explore the teacher’s professional goals and ways to monitor the impact of particular PD. Possibilities here included the use of portfolios, and related to teachers’ thoughts on forming a science department policy for PD.
6. A final interview to ascertain the value of using portfolios as a means of recording and reflecting on PD and establishing a community of practice in the Science department.

It was not possible to abide by this plan completely. There were many factors such as time of day; personal and professional pressures, my responses and other “baggage” both shared and unshared, that affected what one person said on one occasion, yet on another occasion yielded a totally different response. I also decided to conduct a final group interview where all members of the ‘team’ were present. Details of this final conversation can be found in Appendix E.

Scheurich (1995) argued the post-modern case that the interview interaction is fundamentally indeterminate and that in the final interpretation of the interview interaction, there will be an inevitable overload of the researcher's interpretative baggage. As a teacher-researcher and colleague, most of the ‘baggage’ I found was at least interpretable although not pursued in all cases. I also chose to report the narrative as dialogue so that the conversational context of other narratives could be analysed.

Atkin (1991, p385) observes that a major goal in teachers professional lives is to move closer to how they want to be seen: “It is in that gap between a teacher’s ideal and what she or he actually does that one finds a particularly fertile ground for seeking new knowledge”.

Teachers choose their profession because of certain ideals, and yet have to cope with professional and other circumstances that challenge those ideals. There is often a huge gap between a teacher’s hopes and reality. As Wood (1992, p540) states, “It is across the awful,
sometimes yawning, gap between teachers’ original ideals and their present practice that faculty development can construct a bridge of hope and meaning.”

Hargreaves (1991) argues that to misunderstand the teacher’s voice is to misunderstand the teacher’s teaching. To more accurately characterise the gap between ideals and practices I have sought to include teachers in this study as co-research workers. The empowerment I felt related to the teachers sharing in the social construction of the account. Woods (1996) argues that teachers’ voice in research needs to include teachers discussing their perceptions of the processes and to be treated as co-research workers rather than the subjects of a study. The final interview I conducted with all members of the ‘team’ present brings out some aspect of this.

One of the most frequent criticisms of narrative research is that it “unduly stresses the individual or inner environment over the outer or social context. Most approaches that stress the embodied character of personal knowledge also take its embeddedness for granted” (Elbaz, 1991, p13). The dialogical presentation of the narrative is an attempt to embed narrative in the psychological and sociological context of PD in science teaching and to weigh the influence of each.

Scheurich (1995) argues that if the transcribed text becomes ‘the data’ then the physical, non-verbal aspects of communication disappear. I have sought to replace the concept of ‘the data’ with the concept of ‘the meaning’ of my colleagues in interpreting their individual and collective responses to professional development. Lincoln and Guba (1990) argue that the standard for qualitative research is the demonstration that the findings and the researcher’s
interpretations are credible to those who were involved. The professional development portfolios developed were to be criticised by the authors themselves, as indeed were any other form of reporting of PD that came out of this study. Zeller (1995) argues for an extensive review by respondents to reduce the effects of the researcher’s self-absorption. This was possible in the day-to-day interactions of the researcher and subjects.

Hargreaves (1995, p13) argues that, “the impetus toward collaborative research, and the necessity of building constructive and comforting relationships that make such research possible, has inclined many researchers of teachers’ voices and teachers’ knowledge… in many way, through studying kindred spirits, to reveal reflected and refracted images of themselves.” He warns that the teachers I selected may not be representative. What matters more is that the teachers interviewed are represented critically and contextually, rather than merely presented.

**Validity**

To validate the data staff were given a copy of their transcribed interview dialogues to clarify and ascertain that what was transcribed indicates accurately their thoughts, meanings or intentions. Students in those classes where teachers indicated a changed teaching approach as the result of professional development assisted in ascertaining how the change improved their learning or perception of science via a short survey constructed by the teacher and the researcher.
Teachers were asked what they would like to develop with respect to the forming of a science department policy for PD, and what weaknesses and strengths were involved in the current process. How can the reporting and recording of PD be improved? Were portfolios a useful tool in the reflective process?

Woods (1994) concluded that interviewees do the validation (not necessarily consciously), as they assess the narrative interview of their own experiences, their personal and practical knowledge and their private theories by putting them into practice with renewed confidence. This view of validity places an emphasis on the “insider’s perspective and follows logically from the principles of collaboration on which it was based” (Woods, 1994, p320)

Atkin (1991) observed that the teacher-researcher and the subjects may change as the research unfolds and as a result of it. This was certainly true in this longitudinal study. Little (1993, p143) sums up my own position on the validation of this research: “Our own voyage to the moon may require that we abandon our reliance on the present base of consumable research and expand our support for arrangements for teachers’ involvement in the explication, invention, and evaluation of local practice.”

**The Study Subjects**

Eight members of the faculty were initially interviewed, based on their willingness and time available for interviews, to gain some insight as to the needs of the local science faculty. After an extended PD program lasting for six weeks, four of the seven staff from the school who
attended this activity were interviewed. I was also one of the participants in this PD and felt that as I had been involved, I may understand some of their comments more readily, and it may give me an insight as to what the staff actually experienced.

The main subjects of the study in production of the portfolios were four teachers in the science faculty at a large, rural secondary college. They were selected because they were willing to participate in this project, and the author felt their experiences were varied. The method of recruitment was through a general approach made as to their willingness to talk about their PD experiences. They also volunteered to trial the production of portfolios. Pseudonyms are used throughout this study and the four subjects interviewed each have a chapter in this thesis bearing their pseudonym.

The ethical issues for this research are covered in Appendix F, whilst the Professional Development Policy document and permission form to participate in this research that were given to study subjects are shown in Appendix G. A copy of the Plain Language Statement is also given in Appendix H.

**Position of the Researcher**

The nature of the power relationships (Woods, 1994) between the researcher and the interviewees has varied over time. My own appointed positions in the school have changed over recent years. Over the fifteen years at this school I have been a Year Level Coordinator, Sport Coordinator, and most recently Science Coordinator. At the time of this research I held
no official position. I believe that my relationship with the other interviewees is one of mutual respect for each other's abilities and knowledge and a parity of esteem. Parity of esteem does not mean the same status in the same areas. We all have different areas of respect, knowledge and authority.

Johnson & Kerper (1996) and Thomas (1993, p.236) observed that one feature of the collaborative enterprise is that the partners give each other equal status. If the interviewees had felt threatened, I believe they would not have been willing to participate in the study. In fact this independence is illustrated in their objection to the portfolio reporting strategy of faculty development.

**Positioning Theory as a tool in analysis of social episodes:**

The societal rhetoric, the institutional practices of the science department as well as the communication between members within the faculty in this instance about improvement, can be thought of as being discursively produced. Harre and van Langenhove (1999, p4) observed, “It is only because people have some knowledge of rules, and have expectations, that meaningful communication is possible.” It is only during meaningful communication, usually by conversation, that the learning and gaining of knowledge can be achieved.

The study of conversation or everyday workplace discourse has become a key focus of new theoretical developments sometimes called social constructivism. The analytical tool used in the study of local moral orders as ever-changing and shifting patterns of obligations and rights
of speaking and acting has come to be called ‘positioning theory’ (Harre & van Langenhove, 1999). Common to all varieties of social constructivism are the premises that what people do is intentional, and that what people are is a product of lifelong interpersonal interactions (Davies & Harre, 1990). There are a number of different versions of “constructivism” yet they share the premise that all psychological phenomena and the beings in which they are realised are produced discursively.

Discursive practice can refer to the ways in which people actively produce social and psychological realities, asserting the social meaning of what is being said on the respective positioning of the participants of the discourse. Episodes or events not only shape what people do and say visibly, but also are shaped by feelings, thoughts and intentions and so on. One of the central points of the paradigm is that people are continually engaged in the construction of their own social identity or life space.

Conversations may change according to the experiences or psychological location of the persons involved in the conversation and the situations they find themselves. The three basic features of these discursive interactions are:

- The moral positions of the participants and the rights and duties they have to say certain things
- The conversational history and the sequence of things already being said and
- The actual sayings with their power to shape certain aspects of the social world.
Within conversations, positions can and do change. One can position oneself or be positioned by another or a situation. Since conversations have storylines, the positions or roles the participants take in the conversation will be linked to the storyline. Positions change as the narrative unfolds, offering the possibilities of taking up new and different positions.

The model involves three main aspects that are linked to each other: the storyline, the position and the social force of both. How one's words and actions are interpreted expends one momentary 'position'. This concept relates to the notion of power. Power exists on several levels. There is the level of moral standing, the right to position oneself and others, for example a moral capacity as a classroom teacher or as a science coordinator.

Words may have different meanings depending on the mode of positioning. Each conversation is a narrative, a story that will mean different things in different contexts (or positions). The positioning triangle may be represented as follows:

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  Position
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     |
     Social Act
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An individual can use his or her 'power' as a moral standing to position others. For example, staff participating in extended learning technology PD may find themselves in a position to help others who have not participated in any such PD. Or, it could be that a person with more experience may give advice; wanted or otherwise, to a less experienced colleague and therefore position themselves as the 'teacher' and the recipient as the 'student'. It could be
quite possible that some staff may not wish to be told what or how to do something by certain staff, yet will be quite open to help by other staff.

Participants position themselves in relation to one another by drawing on the possibilities available from past experiences, history and some understanding of the possibilities. In dynamic interactions there are very often many, often contradictory, options created by and available to the participants (Linehan & McCarthy, 2001). Positioning can be used as an analytic tool to describe the morphogenesis in the cultural agency of participants through interactions in a community of practice.

The main dimension reflects the degree to which the initiator of an exchange is capable of imposing positions upon others or refusing those that he or she has been assigned. Positioning behaviour will depend on who is taking part in the conversation and even where the conversation is being undertaken could change significantly even from one day to the next. It would be expected that a conversation occurring in a staffroom at lunchtime could have quite a different meaning to a similar conversation being undertaken at a meeting between members of a school council.

Positioning theory is used as an analytical tool in this study to understand the meanings in the multiple interpretations, contradictions and changing positions that occur in the workplace conversations. The interpretations taken by the speaker may not be the only interpretations possible. When people remember an incident they tell it as a story, and that story may be open to interpretation. The cognition is primarily public though it is drawn from for private
purposes. What people actually do is constrained by what they have a right or duty to do, which in turn is constrained by what they can do. Therefore it is governed by capacities and a local moral order.

‘Positions’ are a set of rights and duties implicitly displayed in the distribution of performances among a group. They may be reciprocal whereby in positioning oneself one may be positioning another; for example, I decide and you obey. Positions may be ephemeral and they are also contestable. The positions will not last since they may change rapidly and may be open to challenges. Conversations occur at a particular time and space and cannot be repeated in exactly the same way. Positioning theory is a valid tool for research using interviews in that the positions or story was true for those particular people at that particular time. The stories given will depend on how one is seen.

**Pronoun Use as a Coding device**

The study of pronoun use in everyday conversation allows expression of the moral aspects of self-reflective talk of the participants (Mulhauser and Harre, 1990). Where the issue of responsibility for speech and other actions are concerned, pronoun use is the main device by which, via positioning in conversation, responsibility is distributed through a universe of persons and agents. The teacher subjects in this study are actors, agents responsible for some of their actions and sometimes for the actions of others. It is largely through pronouns and functionally equivalent indexing devices that responsibility for actions is taken by actors and assigned by them to others.
The personal pronoun "I" and other first person expressions are used as indices of location. Firstly, 'I' indicates whatever is denoted by the speaker's spatio-temporal location of the speaker at the moment of utterance but 'I' also indicates the person's moral responsibility for the social intent of the utterance. If it is a fact-stating utterance, it is the speaker who is responsible for the trustworthiness of the utterance for repetition by the hearer and for any action he or she may undertake in accordance with it.

The pronoun grammar of "you" and "we" makes three features of talk manifest:

- "You", and "we" to a lesser extent are used with the simple present ('you put') to express impersonal norms.
- These forms express impersonal motivation. The "you" does not solicit the addressee's personal intentions.
- "I" is the favoured pronoun for the use of the progressive tense ('I am putting') indexing the action of the speaker.

In standard normal patterns of conduct that have their own meaning "you" and "we" expresses engagement. Such language games involve a self-concept through which a person sees him or herself as a participant in pre-established social customs. The choice of "we" rather than "I" is a narrative convention which has the effect of a rhetorical distancing of the speaker from an overt self-reference to make the personal source of advice or knowledge more palatable. The editorial "we" exclude the addressee as a referent – that is, not the 'nudge nudge' and cosy "we" of complicity, but implies the author is a member of, and spokesperson for a larger group.
The surface meaning of joint activity often disguises only thinly the true agentive "I" or "you", and more generally, the authoritative persuasive voice of the ego will 'contaminate' the illusion of modesty. "We" can acquire the very connotations its use has sought to avoid. In the innocent use of "we" a narrative convention rather than a purely rhetorical device is at work.

One way of looking at the foregoing is as a sketch of a story line in which the plot of a professional development activity culminating in teacher involvement and engagement is unfolded. The pseudo-corporate "we" presents that tale within a social framework. It was or is a joint enterprise led by a modest, unassuming individual; but one who knows what he or she is about. By accepting the casting, the hearers become one of the team, the 'good guys'.

The research is presented predominantly as dialogue. A dialogic research method offers an opportunity for positive positioning — to be able to collaborate in the dialogue is to supplement and enrich the storylines given, and so to mediate and transform the meaning of the conversations in a way not possible within a more epistemological paradigm. The use of a different language, or genre, within the science department subculture in the school is also more evident in dialogical exchanges, which may be unfamiliar to those not in the science department.

Coulter (1999) has argued that merely adding voices in discursive research is not enough to promote genuine dialogue. The voices should reflect authentic individual experience. In the interviews conducted in this study, both opinions and experiences were voiced, at different times, reflecting the different positioning that may have been occurring at that time. The use of
a dialogic method enables the construction of meaning in terms of practice rather than only in terms of theory.

In each conversational interview slightly different questions were used, the dialogue encompassed different perspectives and experiences and at times produced quite different responses from those that may have been expected. This potential to lead to unintended consequences is one thing that dialogism has offered. The overriding goal of positioning theory is that of learning and change, and it is within dialogue that such change is enabled. The interview questions that could be described as semi-structured enabled a different path or focus to be taken according to the responses given.

The timeline for the research study can be found in Appendix E which covers what PD was undertaken by the study subjects over the time of the study and also covers some background to the conversations of the study subjects.
CHAPTER FIVE

Jason
Chapter 5

Jason

'Jason' is an experienced teacher of twenty-five years, and has been teaching predominantly in the science area. He has held various positions of responsibility throughout those years both within and outside of school. Within the school community he has been a Science Coordinator, a Year 7 Coordinator, a PD coordinator, a Year 12 level coordinator and most recently has been appointed the school Daily Organiser. He is a respected member of the science team and has been willing to share his experiences and expertise with other staff. At the time of this research, I had worked with Jason for fourteen years, and had shared the teaching of Chemistry with him in the school for twelve years. I believe we have a good working relationship and a respect for each other's opinions.

The First Conversation

The following conversation was conducted with Jason to gain some insight of his thoughts about PD and how he sees his PD related to his science teaching. The interview was conducted between classes during our 'spares'.

Jason was questioned how his teaching may have changed over time, and he in fact claims that his teaching techniques have remained fairly similar throughout his career:
J: (Pause) Not a huge difference. I've always liked to be practically based, so to give the students as much experience with experiments and hands-on activities where possible. That has stayed pretty much the same all the way through... The courses themselves have changed. When I first started teaching it was virtually left up to the school to decide what to teach. Then the schools I have been in moved from a general level-by-level unit system in Year 9 and 10, and more recently the CSF has had a fair impact in what is done in the classroom.

M: And has that impact been positive or...

J: In terms of making it consistent throughout the State, yes it has been positive. In terms of reaching and connecting with the kids, I don't think it is as good.

Jason places great emphasis upon the importance of his heuristic model of science teaching that is both rigorous and appeals to students. He positions himself as a critic of prescribed content and outcomes and standardised levels. He speaks with the authority of his experience.

Yet at this stage of the conversation, some confusion seems to be entering Jason's position:

M: So how do you think we can change what we are currently doing so that we do connect with the kids?

J: I think with the CSF some of the ideas are actually at the wrong level. And some of the ideas are in areas the kids have no real interest in. So, in terms of scientific knowledge, they are good material, but for the general population of kids, they are either not interested in it, or they are not going to use it. For example, doing the Periodic Table in Year 10 – I don't think it is of great value to most Year 10 students, given that 20% at most would go on and study Chemistry. The Periodic Table, electron structure, just doesn't interest them. Another example would be the electronics work that is done in Year 10. That's got some other things as well, because with the electronics area, I've found it difficult to get enough equipment and experiments that can work and keep the students active and still learn the concepts that you want... And kids get frustrated with that. So if it works in class and they understand what is going on, then they are fine. If things aren't working, they get frustrated and just want to give it up.

Since we had discussed CSF level outcomes in various faculty meetings, I am aware that he is here referring to topics like body systems, which our school had traditionally taught at Year 9 level, but now under the CSF they should be covered at Year 7-8 level. Many staff, and in particular Jason, strongly believed that many students would have the maturity to be able to
cope with the sheer amount of new terms and the complex nature of work associated with body systems. He also mentions the Periodic Table as a problem at level 6 (Year 9/10). He is adamant that to learn it in Year 10 is probably wasting many students’ time. He positions himself very strongly here when he states that it “just doesn’t interest them”.

Jason then moves to talk about himself, and makes a concerned statement about getting “enough equipment and experiments that can work and keep the students active... the kids get frustrated with that”. He actually repeats his concern, so that it must obviously be of importance to him. At this stage of the conversation, the author tried to steer the comments towards PD.

M: So...has PD actually been able to help you in what you teach?

J: Yes, I think it has. And I still think there is a way to go. It does a number of things. The PD can actually enthuse you again for what you are doing in the classroom. It can give you new ideas, and keep you up-to-date with new ideas. Sometimes curriculum ideas, sometimes actual experiments you can do. And I remember in the written survey that the most useful PD that I have had has been classroom based PD. PD to do, that actually gives you some skills or ideas that you can actually take back to the classroom, and implement straight away. If it is PD that actually works through ideas and concepts and then requires...and then leaves it at that and sort of thinks that you are going to go away and work through the ideas and implement it...because you get back to the classroom, you often don’t implement it. Because there is the gap between the PD, having the time, and actually meeting the daily needs of the kids.

M: Mmm... So, when you do PD, what do you actually expect to gain from it?

J: ...The enthusiasm towards teaching the area, and ideas or skills that actually allow me to improve what I am doing in the classroom. They would be the main things I am looking for.

In this exchange, Jason is trying to explain how PD has helped him. He keeps placing himself in the classroom, and indicates that he is a professional who needs PD to keep enthusiastic. He mentions some of the problems with PD such as the lack of follow-up that often occurs. As a
result, many of the ideas, although interesting and useful, do not get implemented. He again positions himself strongly in the last statement; "They would be the main things I am looking for." His use of the pronoun "I" shows how he is self-positioning himself here.

M: Is there any favourite type of PD you prefer, or did you imply that before?

J: Yes, I implied that before by saying PD that is directed towards the classroom. It has to impact on the kids. It has to impact on my teaching. If it is theoretically based, it might be all well and good, but it doesn’t often get into the classroom. Probably the most successful has either been short demonstrations that actually give you ideas that you can take back into the classroom that you can implement into the classroom; or longer term projects where for example the research we did some years ago on Girls in Science. We were actually working together in teams and we worked, we surveyed ... it was Action research type of stuff. So we looked at where we were at, we did some gathering information, we then looked at where we could go, and then we implemented it. And it was meant to continue along in that cycle. Now, unless there’s a real driving force, that action research often doesn’t occur. You might do it the first cycle, but you may not the second cycle. But the school, working in a school you naturally review your courses now and again anyhow. That has probably been the biggest benefit of having the CSF thrust upon us. That we’ve actually reviewed what we’ve been doing, justified what we’ve been doing, and we are going to continue with that: This fits the CSF or that doesn’t.

Initially Jason has mentioned how PD needs to "impact on my teaching". This is further evidence of the moral position he is taking on the focus of PD on the child’s learning; rather than compliance with an outside agenda. Then he brings about a different position: as a colleague to me, when he refers to the GAMAST (Girls and Maths, Science and Technology) project that we were involved in together in the late 1980’s. He used that background as a reflective example on the use of working with colleagues over an extended period of time in an area that interested most science staff; where they were to actively look at what they taught (to both girls and boys), how they could change lessons to be more interesting and to allow girls to achieve to a higher extent. His use of “we” in this section shows how his position has changed to include me and show the use of a team, rather than as an individual. It was an
example of an action research that is still in some ways being done in the school in the form of continually reviewing and updating courses, although now the thrust seems to be more on the boys than the girls. Jason seems to be claiming quite strongly that he wants to be given things to implement.

M: So do you think the GAMAST project …was actually successful in the end?

J: It had an impact I think certainly over the duration of the research. It had quite a good impact. It raised the knowledge of the staff, in girls and their needs in science. It changed student attitudes, but I don't know whether it had a permanent change. Because we didn’t go ahead and gather that information afterwards. It certainly had that impact at that time for staff and for students.

Jason is affirming his position that feedback and follow-up is vital in implementing change. In the next section of the interview I attempt to draw out possible ways of sharing PD experiences with others, although initially it seems that Jason is not quite sure what to say, or perhaps is confused by the question posed:

M: So, when you go on a PD (activity) is there any way that you think that others could actually benefit from what you’ve done?

J: In what way?

M: You go on a PD, and after a session you just verbally say ‘That was fantastic’ and leave it at that; or is there something more that happens?

J: (Pause) Yes…

M: Or maybe more…

J: If we use (pause)... the main one that the Science staff go to is the STAVCON at the end of the year. And what basically happens there is that people do get a lot out of it. It is a really worthwhile PD activity because once again there are some there that are theoretical and not much use, but there are some that are quite practical and hands-on and really get you inspired again. And they are the ones that you take back to the classroom. Now sometimes, when we come back from conferences, we simply say, ‘Oh, that was good’, other times we will actually demonstrate it to other staff members. Now if we just say that its good, it ends up being not spread to the other
staff members. It might just be used in your own classroom. If you demonstrate it during a learning area meeting for example, then it tends to spread. And it is more valuable then.

At this stage I could have followed up on what Jason said, and yet since I am a fellow colleague who has also gone to STAVCON on many occasions, I probably felt that I understood what he was getting at. There have been a few faculty meetings over the years when the sharing of a good idea ‘discovered’ at a PD activity actually occurred, yet it was not at the time made a formal or expected part of ‘reporting’ of PD. Reporting of PD had been generally adhoc and was never followed up.

In the following exchange, Jason admits that communication about PD needs to be improved, but the time factor involved is seen as the major obstacle:

M: Do you think there should be more communication going on…with PD?

J: There does need to be, but the main thing is the time. Because we get one meeting every fortnight, at the maximum, there is really so much other stuff that has to be done. We’ve tried to use those meetings for more formal discussion and sharing times, but quite often there is just so much other stuff it just gets swamped. Or else it’s at the end of the day and people are just exhausted. So the timing of it is not congenial to that sort of sharing.

M: So could there be another way in which we could possibly report things do you think?

J: …I don’t know of a more time-efficient way…because another way which would take time on the individual would be to prepare a sheet. And pass it around. Once again, a lot of people will see the sheet, but the enthusiasm won’t be there from reading the sheet. It’s actually from demonstrating and doing it that people pick up that enthusiasm and begin to see some of the ways that they could use it for their own kids.

Jason was quite emphatic that he did not want to fill in a written sheet to report what he had done. He uses the excuse that “enthusiasm won’t be there from reading the sheet”, but I
believe he is stating that *he* won’t have the enthusiasm. He could be speaking here from a position of experience as his authority here, and yet he is assuming others will probably feel the same. He feels that using meeting time to report is probably the "most time efficient way" and he believes that staff will be more enthusiastic if they get the information first hand. Jason is also again implying his preferred type of PD is the hands-on type as he is saying that staff will be more enthusiastic if they see a demonstration of the useful activity and as a result get some enthusiasm to use it in their own classes. The position he is using here is again as an experienced teacher and he is again relying on the authority of his experience to justify his statement.

M: So, do you think the communication between the faculty members could actually be increased in any way, regardless of whether its about PD or not? Do you think there could be an improvement there?

J: Yeah, yeah, because we are a big school and because we are on two sites we often don’t come across each other. There is, I think over the last two years, people have made a real effort to share resources with each other and bounce ideas off each other. Whereas before that we were getting to a stage where we were actually isolating ourselves. So I think we are improving, but I think we’ve still got a fair way to go...before we are really working as a team and sharing a lot of resources and things like that.

The school underwent many changes very quickly when it amalgamated, and many staff did not want to share and the feeling of 'trust' was not there to share and help others. As Jason says, this is improving. The tension eased measurably during the period of the research and individuals got to know each other better.

J: I actually think there is more likelihood of people implementing stuff if it occurs over a longer period of time and there is a task to do in between those times. For example, you might introduce an area of PD to staff in one session and then give them a task to try something in the classroom and then report back. And I think that is more effective than an intensive training activity and then no follow-up on it. If we are discussing it with each other, we are more likely to implement it. For example, one of
the things I would like to do would be to use more electronic measurement of experiments. Now I haven't really got into that area as I feel we haven't got the right resources, or more importantly, I'm not confident enough to use it yet.

M: So you would like PD.

J: I would like an activity to train me properly in that, and then follow-up later on how it went in the classroom. And ways to improve it... or other ways that others have used it. And things like that.

Data logging or computer interfacing of data collecting hardware is an area of his teaching that he wants to be more competent in. This type of technical skill is something he has always valued. He again mentions follow-up. Only history can change the iron cage of biography. Social structures like the advent of technology can change what one might be. The emergence of a new structure of feeling associated with new technical skills can imply redundancy.

J: We get back in the school and we are so busy that unless there is something driving us to go back to that same thing... we let it drop. Unless there is real value in doing it, we won't implement it. Because our time is precious, we do have a life outside school as well as inside school, so we are going to do the most efficient thing to us. And quite often, that takes us back to the way we were teaching quite a few years ago. What did we do five years ago with that class? Oh, that lesson, that worked well. Bang, in it goes. And the PD that we have done may not be implemented.

Jason is here referring to the time required for proper implementation of new ideas. If a teacher knows something that has worked in the past, then they will use that, rather than try new ideas due to the time involved in researching, testing and implementing new ideas. He speaks for all. Hinting at the 'iron cage' of biography—we are what is us performing ourselves. What we know or think works. There is not much time to fit/rehearse the new when we are busy being our rich selves. He is perhaps justifying the time he has been unable to spend developing new ideas and implies that "we" are all doing that.
As a whole staff, the school participates in a couple of PD activities each year of which the staff to date has had little or no input. When questioned on whether he felt these days were useful, Jason’s reply was initially reserved and hesitant, but then he opened up more:

J: Um... usually yes. Yeah, for example the one we did earlier this year I got quite a few ideas out of it, and I implemented it in quite a few classes. But I know there were some other staff that said they didn’t get a great deal out of it at all. So it really depends on what you are looking for, and what you are willing to grab a hold of, and take into the classroom. But there has been no follow-up, so eventually a lot of it is lost. It depends what the purpose of the day is. A lot of our whole school days have to do with the theoretical side of it: the curriculum side of it, or whatever, where we might spend some time actually writing some curriculum which does in the end impact on the class, but it may not change our teaching style. So, it needs follow-up, I think. I think that’s where it really lacks. I don’t know of how to find that time.

The imposition of the CSF marked the return of government attempts to control and direct teaching and the outcomes of schooling. Introduced in 1995, it was only just being introduced fully at Bangarra in 1999, and ‘already’ from Jason’s perspective there were plans to bring out a CSFII (CSF version two). His comments about CSF may seem somewhat negative. Jason has his own position as an experienced teacher on what he believes is unsatisfactory in the science course at the moment, in particular his comments about electronics and the necessity to have equipment that works effectively. Jason is an experienced Junior Science teacher, but his pedagogical content knowledge is in the Chemistry area, which also accounts for his comments about the usefulness or lack of with respect to the Periodic Table and electronic structure to students of today. Jason chose deliberate self-positioning when he wanted to express his unique point of view.
Jason used the pronoun "I" in many of his comments, indicating a strong self-positioning. He also puts his personal view and experience forward when he says, "I've found it difficult to get enough equipment and experiments that can work and keep the students active and still learn the concepts that you want." Later in the interview Jason talks about what he considers to be one of his weaknesses as a teacher when he mentions the use of electronic equipment to record data (probes and the like): "Now I haven't really got into that area as I feel we haven't got the resources, or more importantly, I'm not confident enough to use it yet." He is indicating an area in which he would like further help, whether it may be in some form of PD or not.

The influence of PD on Jason appears to be best if it is classroom based or useful to his classroom teaching. He has noted the difficulty in sometimes implementing the PD, because of the time difference between when a PD activity might be done, and when that could be used in the classroom. Many staff attend STAVCON at the end of November finding it inspiring, yet months will pass before they can directly apply any ideas they got for changing their teaching. Jason is talking about his self-as-product, obstructed by the operation of the system rather than his attempts (self or process) to change the system. Perhaps he is commenting on the environment within which he works. In the dialectic between self-as-product and self-as-process he has he has found there has been little scope for individual or group initiative, they being so many other competing values and interests.

Jason refers to his professional identity as a classroom teacher when he talks of his students being interested, or frustrated and how he likes to do PD that is classroom oriented. Even when he talks about showing other staff how to do something, this is his self-positioning as a
teacher. His sharing of knowledge with other staff during a meeting could be seen as pleasure in passing on his expertise perhaps in an area that others may have limited or no knowledge, or perhaps even from a position of friendship when one shares what one knows or what one has found out with their friends and colleagues in need. As Jason observes of himself and assumes of other teachers, "It's actually from demonstrating it and doing it that people pick up the enthusiasm and begin to see some of the ways they could use it for their own kids." He keeps coming back to his position as a committed teacher.

Jason reflects on the communication problems in the school positively, for he has stated that the staff have been getting together to share resources and ideas, although he observed there was still a fair way to go for the staff to be truly working as a team. He also felt that PD would be more effective if it was done over a period of time, and that adequate time is given to share what one has achieved. The PD which sees teachers as social products rather than autonomous in a biographical sense would have a greater chance of being implemented in an appropriate way if staff had a chance to develop it soon after they had participated in the PD.

A sense of some insecurity came out in his need to improve competencies in his use of digital technology. This illustrates his commitment and his desire to provide experiential learning for his students. He felt that although he was able to get something out of a PD activity, it didn't necessarily mean others would. He made reference to a whole-school PD activity on Gardner's "multiple intelligences", which he had found beneficial by being able to use some ideas in the classroom, yet other staff had not.
The amalgamation of the technical school and high school with their distinct trade and academic traditions in teaching and curriculum created a broader range of students that needed to be catered for. “Multiple Intelligences” emphasises different intellectual learning dispositions and interests of students and the need for teachers to adapt varied teaching approaches to cater for the needs of the individual student. It emphasises the individual agency of teachers rather than a collective cultural agency or structural institutional responses. Again, the need for follow-up was mentioned implying a collegial response. That particular activity has still had no follow-up to this day, and many of the useful ideas and dialogue that may have come out of that day have been ‘lost’ to many staff.

Jason was very definite about the need that PD programs be useful, related to teachers’ purposes and typically classroom based, were followed-up in practice, and were granted time for reflection and communication for effective implementation. This has shown Jason taking a both collective and individual positioning stance.

**The Second Conversation**

In the following exchange, Jason is “admitting” to getting some personal value out of the extended PD program.

J: I found it quite good because it linked the PD activity to what you are doing in the classroom. It was trying to get us, and it actually did get us to apply what we were doing, with at least one of our classes. I found that valuable.

M: You mean the homework aspect – the fact that we were able to take something away with us, and practice it on the class?

J: Yes. (stressed as important)
The 'homework' was given at the end of each session and acted as a practical follow-up in one or more of one's classes in the week following the activity.

M: Was there any aspect of it that actually helped your teaching?

J: A lot of the ideas that they had, I had already picked up from other in-services, but some of them were quite some time ago and I'd either forgotten about the process or, in a couple of the cases, I was automatically doing the process without thinking of that specific teaching technique. So it was a good way for me to review what I was doing, and say 'Why don't I adapt that situation to this teaching process and improve on it?'

M: So could something like that be valuable to experienced teachers to just remind them about things or just keep them aware of ways of doing things, that we can do this kind of thing...

J: I've certainly found it valuable to me, as it made me think again as to what I'm doing in the class, why I'm doing it, what I'm trying to achieve with the kids. And sometimes an experienced teacher will just carry on and not go back to the basics. And going back to the basics was a valuable experience.

Jason is very confident in his reply here, He is stating that it was good for him to revisit techniques or strategies that he may not have used for some time, and admits that as an experienced teacher he sometimes would not necessarily go back to the basics. He is again strongly positioning himself morally here. He found some of the aspects challenging, which he admits to finding valuable. He is using the strong 'I' here rather than the ambiguous 'you' or 'we' indicating a strong self-positioning has occurred.

In the following exchange, I tried to find out what types of activities Jason may have actually used in his class. It was not easy getting the information from him; he seemed to not want to open up on what he actually does with POE task (Predict, Observe, Explain):

M: Was there any one particular activity that you actually used in a class... trialed?

J: I deliberately trialed a Predict, Observe and Explain. But I also realise in trialing that, I also realise that I quite often do that, either briefly in some classes or in a
deliberate manner. Sometimes a POE can last just five minutes and sometimes it takes a whole lesson depending on the activity. I use it mainly on junior classes.

M: And how did it work?

J: Quite good. Yes.

M: Did you do the ball one or...

J: No, I didn’t use the actual activity I was shown there, I used the topics I was going to do. One time I do it is with year sixes when they come for their visit.

M: What do you do with them?

J: I use chemicals. I’ll say ‘okay, we might have observe a couple of chemicals and see what happens, and then I’ll get you to explain. So we’re going to add these two chemicals together – what’s going to happen?’

M: And you find the kids get really interested in that?

J: Yes. They really enjoy it. And it’s quite an effective way for the year sixes to have an easy introductory session in science.

The ‘ball one’ referred to here is an activity involving the use of two balls of similar size, such as a softball and a foam ball (or similar) and the students have to predict which ball they believe will hit the ground first when dropped simultaneously from the same height. They then observe, and are asked to explain their observations.

Jason perhaps used his exemplar to maintain my confidence in him –to show that he had actually used a type of POE activity that was not mentioned in the PD. There is an apparent avoidance here. He did not speak about his trial but an earlier episode that does not illustrate this metacognitive strategy very well. Biography intrudes again into reflexive self-development. He could have been referring to his grade six experience as an affirmation of a new challenge, or that he is reaffirming that what he already does in class is all right. He could be trying to position me here informing me about what he actually does in this newly
important area of local networking. Perhaps he has re-positioned himself here to be more
comfortable with his response to my question about his use of PD.

The conversation continued:

M: Was there any section in the PD that we did as a group that you thought we could
have perhaps spent more time doing... were there any areas that may have been a bit
rushed?

J: The main one that I felt I wanted a lot more out of, and that I’m going to have to
follow up myself, was the technology one. Because while we have quite a lot of
equipment and we said, ‘this is the camera, this is the scanner, this is the video link,
this is the...’ – they also had a microscopic viewer – whilst we had all those things,
we didn’t really have hands-on, and work out exactly how they could be used in class.
So I was actually after some time to actually become confident in using them myself
and then work out where they can be applied in the general science course. For
example another one would be the time that we set up the data. We had the computer
and the infrared distance time bracket and the receiver on that. Now that is really
beaut, but I needed more time to become confident with the program, because I’m not
ready to use that in the class, even though it might have lots of uses. I’m not ready to
use it in the class because I’m not confident with the technology, with a group of 25
kids.

M: So, I kind of get from what you’re saying, in some ways...that you wouldn’t mind
to have more activities in that kind of area where you’re dealing with them hands-on,
so that then you can take that to your class. But being told about something, or being
shown something...

J: Basically in this course we were shown that the schools have this equipment but we
weren’t able to actually work through and use the equipment ourselves so that we are
competent to use it in the classroom. It’s really only what the appetite. And that was
something that I hope to follow up.

In the above exchange, Jason is reaffirming his engagement with technology. He was not
convinced that he gained much from the relevant session and would like follow-up. Generally
he indicated a strong sense of positioning himself as an autonomous learner –self-as-process
rather than product. He is assertive of his capacity to learn to use IT. This is not a defensive
response when he speaks of “more time to become confident” with the technology, and that he
is “not ready to use it in class.”

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M: Do you think there was any advantage in seven of us from Bangarra attending those sessions? Do you think that was a good thing?

J: Yes, I do. It worked well because people the next day, or even through the next week, people discussed what they got out of it, what was fairly ordinary. And it also helped get people to think ‘well, I’d better try this in a class’. So we then started discussing what are you doing, and how did it go, so there was quite good interchange that wouldn’t occur, or would be less likely to occur if there had been only one from Bangarra College. So yeah, team PD is quite good, yes.

Here I felt I was positioning Jason more towards collegiality. The fact that seven staff were doing the same activities that brought about much discussion and sharing of ideas, was very significant for me heading toward a shared cultural agency.

M: And would you hope that that is one way science could improve in the school, that we’ve actually all been exposed to the same type of PD, and the interchange that’s going on.

J: Yes. The PD’s part of it, but providing we keep prompting each other to follow up with it what we’ve picked up from the PD and keep discussing it with each other. The professional exchange with the science staff here is pretty good, people are sharing ideas, resources and stuff all the time. I think it’s actually – I’ve felt it’s always been good, but I think over the past two years it’s improved even more.

Jason positions himself as a positive team member. He repeats a comment he had made in the first interview that communication has improved over the last two years since amalgamation. His view on that had not changed over the few months between the interviews. In the faculty we had been working to improve our courses and put them on the school computer network. That process involved much sharing of ideas and resources at a level that had clearly not occurred previously. The improvement of communication may also be explained by the passage of time since the schools amalgamated. It may also reflect the useful sharing of resources and ideas necessitated by work loads.
In the following exchange, I again position him to account for his use of and activity presented in PD. He positions himself as the experienced teacher who believes in the authority of his experience.

M: If you were going to implement some change in the classroom – like if you came across some really good thing that you thought, ‘I really want to do that’, what indicators would you be looking for as to whether it was actually working or not in the classroom?

J: The interest and involvement of the kids! My own gut feeling as to whether the lesson or lessons worked better. The student’s performance in tests or assignments or whichever assessment method was used, or criteria, or it could be just going around casually asking students if they understand what’s going on... They’d probably be the main ones that I’d use. Thinking I could do them without spending too much time.

M: So, what do you think actually motivates – what is something that would make you really enthusiastic about something?

J: That’s an interesting one...my own personal feelings towards the subject. So if I enjoy the area, I enjoy teaching it...But also the level of interest. If the kids are on task and participating and want more, then that’s a real buzz. Whereas if all they want to do is put their head on the desk or disappear, or ‘when’s the end of this lesson’, then that’s the opposite, that’s a bit of a downer.

M: That’s very similar to what a number of other staff have said particularly the kids aspect.

Introducing reporting using “portfolios” seemed to irritate Jason and his body language changed in such a way as to make me feel uncomfortable and not willing to push the issue in the way I had planned. He is taking the stance that local experience is more important than imported truth sayers. He positions himself in his own biography and the authority of his own experience as a teacher of secondary science.

M: Now, as far as the reporting of PD – Do you feel that writing a report as in a portfolio type of thing where you gather the information about a PD activity and then you make a comment on what you felt about it, and had evidence of how you may have used it in class – Do you think that kind of thing would be useful?
J: I can see that it can be useful. I have reservations about it though. Because I've tried using some of the guide sheets that were given to us just to save time. I actually found that developing a document like that is time-consuming. If you go to the PD, then say in a week or two I've got to write down my feelings about it—it won't get done. Because there are too many other things that are important. So I think the only way I would use a document like that is if I'm doing the PD and write down at that time, set guides, and then maybe reflect on it afterwards.

M: There's been some evidence that says to actually learn about something, you need to actually reflect on what you've done. And do you think other people may benefit from what you've done if you've documented, even though it may be briefly, if you've documented what you've done?

J: I'm not sure that other people would benefit from it because I'm not sure that looking through someone's record of their PD and what they've applied and what they've found from it is going to be all that valuable. I think what I find more valuable is people saying 'I tried this process, this experiment and it was of use'. So I want to hear about their successes and see if I can apply their theory. So if they've applied that strategy of teaching in their class and they feel it's worked, an exchange like that. And sometimes you get that through the science teacher's magazines. Other times you'll get it just by word of mouth, sometimes through conferences. A lot of knowledge comes from when I've actually spent some time teaching a group and I've kept records of what I've done. And I'll plan it again, and say 'that didn't work', so I'll try something else. But I'll say 'that was really good with that group', so I'll use it. So while I often won't document what did and didn't go, I'll still reflect on it. So I agree with what the research has shown, you won't improve unless you do reflect on it and change it around.

M: So if teachers went on something, and said well look, I put in a prac based on this activity, and it was really good—Do you think that's the kind of thing people will be after?

J: Yes. We're always after ideas.

Jason is affirming that he does not want to write a portfolio-type document in his reporting of PD even though he admits that it could be useful. In his experience it rarely if ever has been, but he would not want to deny its possibilities and positions himself out of the conversation. He states that he does not keep a record of what he has done, unless it is in the form of using it in a set of lesson plans for a topic. By his comment 'because there are too many other things that are important' he is saying that there just is not enough time to play with ideas, and he really does not see the use of recording a summary or collection of such thoughts on paper. He
justifies this further when he uses examples of how he remembers things. I am aware of how Jason records his lesson plans, with particular prac and videos noted. I have shared a number of parallel classes with him and am aware of how he ‘works’ in preparation. Yet I am not convinced that he will actually take on a new concept unless he has experienced it himself. This appears to be what he is saying. He is rejecting the concept that he could learn from others experiences. PD for him is solo within the communal. The science department doesn’t exist as a cultural agency.

Jason was then asked if there were any other improvements that he felt might be made between staff and the sharing of PD:

J: If we take up the idea that we just said, possibly sometimes in meetings just having a bit of a show and tell. Now happens informally with teachers who are teaching in the same area, they’ll say look this is a good worksheet, or try this experiment, or whatever… But sometimes the processes that we use in the teaching can be used at year 10 but applied at year 7 or even VCE, and if people said look, I will be assessing students in this way, then I can apply that in a totally different group. Or I’m teaching this in the way I’ve tried some creative writing and these students really enjoyed it, year 10’s. It might also induce others to also try it.

M: Well, that’s the kind of thing that you could put in a portfolio. Evidence. It doesn’t necessarily have to be all that documented stuff that we were talking about before.

J: I was talking personally there. Portfolios will suit some people but I don’t feel that I’m the sort of person – I would benefit from it, but I’m not the sort of person who would sit down and record that sort of thing. But I will plan sessions and reflect on how they’ve gone, and re-plan them. And that’s just a different way that I work. If you call that a portfolio, my portfolio would be somewhat different to somebody else’s. But I don’t think you expect them to be the same anyhow.

In this final exchange, Jason is actually stating some of what I was claiming could be put into a portfolio. I gave examples of some ‘evidence’ as required in a portfolio, and it seemed that the change in Jason occurs here most profoundly. He totally rejects the idea, yet he then says
that he will “plan sessions and reflect on how they’ve gone, and re-plan them. And that’s just a different way that I work.” He is actually affirming that he will use a type of portfolio, yet claims he rejects the idea. He seems to be confused on what a portfolio may actually be and perhaps I was not clear enough in my purpose when initially discussing this concept.

In this interview, the positioning of Jason has changed a little to be more of a self-positioning in the local moral order. He tends to use “I” even more frequently than in the earlier interview and he has referred to his unique point of view, or experiences when responding to the questions.

Putnam & Borko (2000, p6) state that teachers often complain that learning experiences outside the classroom are “too removed from the day-to-day work of teaching to have a meaningful impact” and that teachers’ learning should be ‘situated’ and imply that teachers may learn better if the learning experience such as PD is actually taking place in the classroom. In this example, Jason took what he had learned from the PD and used it in his classroom and was able to report back the following week to the group of teachers involved in the PD about how the activity had worked in his classroom.

He was disappointed in the technology component of the PD program, for it was too rushed. He showed that he still wanted more PD and experience in that area to give him confidence to use the various types of equipment introduced in the PD to his own classes. Putnam & Borko (2000, p6) observe that “the learning of teachers is intertwined with their on-going practice, making it likely that what they learn will indeed influence and support their teaching practice.
in meaningful ways.” If Jason was given further opportunity to develop his knowledge of the technology areas he is not comfortable with, then he will be more likely to use those in his classroom. Putnam & Borko (2000) also make comment that research has shown that the most appropriate type of staff development for an individual will depend on the specific needs of the teacher concerned. So what may be of importance to Jason may not be of particular value to another staff member at that time and place as exemplified in what Carol and Debbie share with other staff their experience of the genetic engineering PD.

Jason does perhaps not want to be forced into doing something (like developing a portfolio) when he already feels happy with what he is doing. He feels he is already reflecting in his own way about his teaching and his lessons. Prawat (1996, p100) observes that, “When people invest time and effort in an activity, that activity comes to have greater value and meaning in their lives”. Jason, as with many staff who have been teaching for over fifteen years struggles with keeping abreast of the technological revolution in our new culture /education.

**Jason’s Third Conversation**

I discussed with Jason the problems he had identified with the CSF and equipment problems and how he felt things might have moved on:

J: The main areas that I identified were in some of the year 10 areas. I know that those areas are still in it but I think our school is taking an approach that will get us around it.... Yeah, working as a team ...I think we're doing that more! We have a good plan set out. But also when we feel it's not relevant to the students, we're putting less emphasis on those areas of the CSF and replacing it with something that they might find more interesting -to make the courses less boring.
The school has been purchasing more equipment, so most of the areas are improving. For example the electronics area with the electro flash kits, and also purchasing some of the TAIN equipment. Probes and stuff like that. But yes, I think we're slowly getting on to it.

Jason is using both 'we' and 'I' here and is indicating that things have in fact moved on. The science staff have been very productive in the work they have been able to achieve in rewriting course outlines and the like. The school has also been willing to allow the science faculty extra funds to replace and purchase new equipment. We have conducted fundraising activities as well to achieve further financial input into equipment purchase. Jason is still somewhat private about his own thoughts and does not divulge much information. Jason's discursive production of his professional self-as-product of the CSF and self-as-process redefining the CSF is dialectic. He argued earlier that the CSF offers a framework for comment and departmental action but here he seems as though he may be refuting earlier comments. He is rather unforthcoming in the following exchange:

M: Working together like the other day when Michael was showing us the probes and other things... that kind of PD within our own faculty is quite important isn't it?

J: Yeah, the sharing...

M: The sharing...

J: ...If we keep sharing ideas and even practical processes, then we'd use it more often in the classroom.

Michael is the Physics teacher in the Department. He is of Asian origin and has often felt culturally isolated but he demonstrated newly acquired data-logging equipment very effectively to his colleagues one night after school. Those in attendance acknowledged him for his extreme helpfulness. Jason was questioned on the PD he may have undertaken in learning technologies, an area he had felt earlier he needed help in. Again he is still fairly unforthcoming with his responses:
J: I've done a little bit. In a number of ways - through STAVCON, but also just through having M... demonstrate that material in school and I've also deliberately gone out and set the equipment up myself.

M: So you've trialled it?

J: I've gained a bit more confidence in using it in class.

M: So you are thinking, you're more prepared to trial it now, more prepared to take that risk, the better, (Yes) more confident you'd be?

J: That's right.

M: And you still enjoy PD that can be directly linked to the classroom?

J: I still feel quite strongly about that!! It's worthwhile increasing your own knowledge but if it doesn't have a direct application to your actual teaching process or activities that the students can do and be interested in, then eventually you'll forget it.

M: Was there a good session at STAVCON this year?

J: There was one session in particular which used the video microscope and a data display unit to show a chemical reaction, or a couple of chemical reactions, and they were using the microscope to actually see gas bubbles produced or metal displacement. And we can use that.

M: That'd be good. (Smiling) Did it get you a bit enthusiastic?

J: Yes. (Smiling very much!) Very much so!! I can't wait to have a go at it!

On sharing ideas and resources Jason's reply was:

J: Well, near the end of this year we've deliberately made time in the science faculty to do that and that has been good. It's been a good bonding time, but also we've been able to clarify the course we were going to take, which has been very useful. The unfortunate thing about being a teacher is that when you are busy from January to early December with your classes, it is really difficult to put time aside to do that teamwork stuff. So it tends to happen either ad-hoc in the staff-room over recess, or after school when you're tired, or at this time of the year.

M: It seems to be one area that a lot of people have commented in the staff-room... just how really good it is to be able to just share the ideas with everybody and...

J: Yes. It really gives you a purpose, you know that you're on the right track and the enthusiasm just rubs off!
He is quite enthusiastic about the sharing concept, yet still claims the timing for things to get done perhaps needs to be addressed.

M: Looking at your previous interviews, you found that as well as taking things directly into the classroom, that you found PD valuable - it refreshed you, it renewed you, (Yes) it improved your networking skills, and you were able to bounce ideas off. Does that sound vaguely right?

J: Yes. That's correct. I still feel the same way.

'Mary' is our PD coordinator and has initiated a system whereby staff need to justify the reasons for taking PD and are then required to write a brief summary of it and how it was useful or otherwise:

M: The other thing that I could just finally ask about - the reporting aspect that Mary gets us to do when we go on PD activities. Do you find that actual writing down would benefit anybody? Or does it benefit you in your reflection, in a reflective type of way, or...?

J: I find that the reporting back to a learning area can be really good, because what you'll tend to do is take in the good things, particularly if those things are demonstrated so that they see it instead of just hear them.

M: Like what happened the other day?

J: Yeah, like the other day when we all had the feedback from STAVCON. Just putting it down in a written format, it's just going to get lost.

M: Unless it's something that you're doing for yourself?

J: Yes, yes. Earlier on you mentioned the possibility of a diary type of thing...portfolios. To record your PD or reflect on it?

M: Record yourself, yeah.

J: I think I mentioned I was hesitant at that point. (Yes) Looking through the original interview, I still don't see that as a personally useful thing for me. That's just not the way that I work. That is one way to reflect. And I agree that reflection is important. But I wouldn't want to have to write everything down.

M: It's just one way that people could actually share PD so that they can actually go and say that this didn't work, or that one was great, blah, blah, blah.
J: Yes. I agree, but again, that is not for me. I prefer to report to the faculty as a group. Keep it short and sweet.

Again Jason positions himself in such a way as to initially avoid the question about the written reporting aspect, and later on he repositioned himself again when he brought up the idea of portfolios. He consistently prefers to try things on an experimental basis to improve his knowledge. He doesn’t trust diaries. His technology of self is his way of transferring himself is through his own investigations that may be inspired by something he sees at PD. He prefers to report directly to the faculty as a group on his findings that he will make “short and sweet”.
CHAPTER SIX

Carol
Chapter 6

Carol

'Carol' is a teacher of senior biology, mathematics and junior science. At the time of the research she had been teaching for thirteen years, yet only began teaching after a number of years pursuing other jobs including working in a pathology department at a hospital and raising a young family. Carol is an active participant in local theatre and musical productions. She is a vivacious member of the staff, and has always some comment 'up her sleeve' to describe some incident or student. Carol has become frustrated in gaining positions of responsibility through the school, and although she has only tried a couple of times, has felt the knock-backs have meant that she is 'not good enough'. She is a very competent teacher, who is passionate about maintaining students' interest in science, and this comes out in many of her comments. She has a particular interest in learning technologies. I have taught with Carol since she began teaching, and I believe that I have a good working relationship with her.

The First Conversation with Carol

This conversation with 'Carol' was quite different in many ways to that with 'Jason'. Whilst Jason felt that the PD which benefited him most was classroom based and needed to focus on things he could take back to his classes like simple experiments and similar ideas; Carol felt that she needed PD to keep up-to-date with current issues and trends -things that she claimed she did not have time to do in her 'own time'. As she says early in the interview:
"I need it (PD) to refresh myself. I need it to keep in touch with what is going on, because I don’t have time to keep up-to-date with current journals. I don’t have time to follow through with what is going on in the world around me, and I really need PD to do that for me."

Carol positions herself quite strongly. She uses the pronoun "I" here to indicate her personal need and commitment to PD. Carol particularly liked topic specific conferences – ones that specialised in a particular area. Her reply on being asked her favourite type of PD was quickly answered:

"Oh, the conferences at the end of the year. Topic specific conferences like the Biology ones. I really wouldn’t mind going to something like... let’s do two days on Year 9 chemistry. And stuff like that. Really topic-specific are ones that I need."

Carol identifies herself as a biology teacher whereas Jason never positions himself as a chemistry teacher. Although she didn’t mention it by name, she refers to STAVCON, which is large enough to cater for science teachers of all disciplines. These state-wide conferences at the end of the year are seen by many country teachers as a means to ‘get away’ and have some valuable time with peers often from other schools distant from their own daily teaching and classroom. Unfortunately only four or five teachers from Bangarra are allowed to go to STAVCON each year due to other conferences also being run at the same time in other Key Learning Areas (KLA).

Carol becomes quite excited when she speaks of her ‘best’ PD experience:

C: I think the best PD I have ever had was the year 12 Biology PD I had when I went down to Melbourne.

M: And what did you do there?
C: Well, we went to the Walter and Eliza Hall Institute and spent an entire week studying at the forefront of genetics. We did prac, we listened to current scientists, we had discussions, we had forums...oh it was just brilliant!

M: So you had interactions with other peers?

C: Certainly. With peers and with scientists who are actually at the cutting edge of what is going on. They would sit at coffee with you and discuss the problems they had experienced. And to take you around their labs and to say ‘Well look, this is what we find the kids need to know.’ It was just brilliant PD (laughs).

M: It refreshed your knowledge, or it improved your knowledge, and it enthused you again?

C: It did make me enthusiastic. It reaffirmed my belief that kids intrinsically love science, yet we are beating it out of them because of the pressures we are under. And that they need more kids that really love science to go into the field.

In this exchange Carol describes her ‘accountive positioning’, where she relates some of what may have occurred at the Research Institute in a conference on genetic engineering on a new topic in the Year 12 Biology syllabus but can in no way tell everything that was done or said. She self-positions with the students with an aptitude for science when she reflects, “Kids intrinsically love science, yet we are beating it out of them because of the pressures we are under.” The institutional pre-science she is referring to is the mandated outcomes of the CSF that leave little opportunity to relate to local interest. She is quite adamant in her ambitions for students at Bangarra to pursue scientific careers. Her excitement in this conversation is nowhere near as obvious as it was six months earlier when she returned from the program. She was just bubbling with enthusiasm and let everybody know what she had just experienced, hence the rhetorical question by the author: “It refreshed your knowledge, or it improved your knowledge, and it enthused you again?” Here I am positioning Carol to answer.

Referring to the natural curiosity and interest in science young students have that Carol feels are being lost, the conversation continued:

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M: So how do you think we could prevent beating it out of them?

C: We have to be... we have to focus more on smaller parts of science. They are awash. They are awash with stuff. We need in the junior forms to make the science totally relevant to what happens around them. Kids live it when you can relate it to them testing the pH of their soils on the farm, or 'Why did Dad add lime to that paddock and gypsum to that one?' They are not particularly interested in whether China has a fault line. They are at that level in 7 to 10, 7 to 9 where they are totally absorbed in their own environment. That's where we need to be focussing our science.

Both positioning of herself and myself occurs here, knowing that I support the prescriptive that we need to make the teaching of science locally relevant and interesting for the students. This also backs up the earlier comments referring to the didactic fragmentation of science, and diminished attention to serious laboratory investigations that she feels will motivate and engage young students.

C: We try to jam too many little bits and pieces into the junior school that really doesn't make a lot of sense...because we are so pressured for time we do less experiments. We do less meaningful experiments, we do little itty bitty ones that are really just play experiments but we don't tend to get into the long-term project type experiments because we simply don't have the time.

M: Do you think students would benefit more if we could find the time?

C: Yes, yes, I think we need five periods a week for science, I don't think we need three. And I think we need to start planning so that each term has a theme, not a theme but a continuity that is evident so that we can build these experiments in, so that we can follow the progress of things and we can relate them back to the topics as we go along.

In the latter two segments of dialogue, Carol is proclaiming her view that science teaching in the junior years needs to improve. She believes a more cohesive and interpreted curriculum connected to the students experience is needed and that more time be devoted to the teaching of science. She thinks that simply replacing current 'topics' with more socially oriented themes would not necessarily produce a better outcome. Many of the topics taught in the
junior science program do not seem to logically develop and do not relate to one another. Carol and I were probably positioning each other at this point. We know from previous conversations that we agree on this problem and possible solution. We have talked about thematic approaches on a number of occasions during science meetings, but have never really had the time to plan it out thoroughly, and so it hasn’t happened.

In the following comment she positions herself very strongly with frequent use of “I”, using quotations from her teaching in which she presents aspects of her biography as a teacher. Her enthusiasm in her work again is again evident:

“I remember just recently when I was doing the acid and base work in year 9. When I started to talk to them about why you might put vinegar on a box jellyfish sting, or why dad might put lime on the garden...or why hydrangeas changed colour. Every kid in the room started to bring out ideas. Why you might use soap to wash off bee stings, when we’d actually tested the pH of some soaps. That actually made some sense to them and they lapped it up.”

Carol indicates that she grounds her science teaching in the related experiences of the students that they can recount. It is quite evident from the last few quotes that her beliefs about what should be taught are strongly influenced by what she likes to teach. She is probably not concerned or interested that China may have a fault line, and she would probably not attend PD in Earth Science, which is a mandated strand of the CSF.

Carol becomes very passionate yet bitter when asked about any PD she feels may have been a waste of time.

C: I think some of the PD I have been to can be a bit insulting to teachers.

M: In what way?
C: Well a lot of the PD I’ve been to, particularly here, when they try to tell us how we should approach the multiple intelligences of the student, how we can get them to be creative thinkers, how we can get them to do this, that and the other. It is so airy fairy it doesn’t address the real problems we have in the classroom.

M: Such as?

C: Lack of equipment. Filthy, disgusting, condemned classrooms. Too many kids! Not enough space! Having to prepare all the pracs yourself because nobody will do it for you. Not having stuff available, because you have to cart it from the prep room to the lab, and it takes forever and we only have three periods anyway. All that stuff and time as well... And the stupid CSF as well. All that impinges on you doing your teaching. Now, every teacher in this school tries to make their lessons relevant, interesting, informative and exciting. And we don’t need people to come along and tell us how to do that. We do it all the time.

The junior school where Carol teaches her Junior Science is on the site of the old Technical School prior to amalgamation, and since Carol was a high school teacher it is possible some of her bitterness could stem from the forced amalgamation, even though that was over seven years ago. The laboratory assistant at the junior site only works in the morning, and her priority is for first aid, rather than preparation of equipment for practical science classes. It is not possible to rely on equipment and chemical being prepared as requested. Another contributing factor here is that the laboratory assistant is not qualified, and was reallocated to work in the prep-room when she came back from leave. Prior to that she was in charge of the print room, and she has had no formal training in laboratory work. This is the context of Carol’s disillusionment with which she knows I empathise.

Carol believed that the science department worked well together, and referred to them as “a professional group” in which she asserts her membership.

M: Do you think a lot of PD could be actually learned from ourselves too? ...As far as sharing?
C: I certainly do. I certainly do!! I think PD professional development is as much an emotional thing as it is a curriculum thing. I think we have to support people around us and offer ideas. I think we need to be a more cohesive group. I think that as professional people that PD would come along. But I don’t think that that will happen until we are under less stress. That is my personal feeling. I think we do that anyway. The professional group that I have seen, …I haven’t seen many, I’ve only worked in this school. The professional group that I have seen work together very well if we are given the time.

M: So do you think communication could be improved?

C: Yes.

M: And how do you think we could achieve that?

C: We need a central administration block and a central science staff room.

M: The working on two sites makes things difficult.

C: I never see Doug T... never see Daryl J... I rarely see Debbie, I only see Trish in passing, I only see you when we’ve got spares together. A faculty night is not a good idea because we are tired; we are exhausted... we really need to be together. At every opportunity. We need our resources in one spot. And that’s the problem.

I have positioned myself here when contributing the empathic comment: ‘The working on two sites makes things difficult’. At the time of this research there were two administration offices, one on either site (Junior site and Senior site), and there were three science staff rooms, two of them on the Junior site, and one at the Senior site. Resources were spread all over the place and it was very difficult to keep track of them.

In the following exchange, there is an obvious change in positioning occurs:

M: The DoE (Department of Education) is bringing out some intensive PD...extended PD. Do you think this could be beneficial to science teachers?

C: Depends on the nature of the PD.

M: In the Science area, starting next term.

C: Is it curriculum PD... is it CSF PD?
M: I think it is basically technology orientated PD. How we can actually use technology. Geoff is actually a facilitator, but he hasn’t given out much detail about it at the moment, but that should change early next term.

C: I wouldn’t mind refreshment on how to use technology.

M: It is going to be intensive, extended PD. It will go for a couple of hours a night over a period of a few weeks.

C: Yeah, I’d be happy to do that because I feel that I don’t use enough hard equipment, hardware. I should. I’m not sure I’m ever sure it’s going to work, which is why I don’t use it. The equipment is always on the wrong site which another reason I don’t use it. If we were all aware of its possibilities perhaps that could be a focus of us getting prepared, if we organised technology better if we all knew how to use it. For instance, I love that Videoflex! If that’s what you are talking about. I love it!! And I would love to have a PowerPoint screen. Because I can use those and I would!!

In this exchange, Carol positions me as a senior colleague when asked about the up-coming PD. She is not interested in more CSF related bureaucratic training. I was not really sure about the nature of the PD at the time, but explained it as well as I could in the situation of the interview. The ‘Geoff’ referred to here as a facilitator was the current Science Coordinator at Bangarra, and he had not indicated to anyone what the PD was about. He was himself only starting to be trained to facilitate the PD, so probably did not know all that was involved at that stage anyway.

Her interest in the technology-based PD was evident was consistent with her engagement with the gene technology PD and her success with the use of audio-visual technology such as with the Videoflex and the PowerPoint presentations. She wanted to be refreshed on technology. She was happy to use equipment if she knew how. She commits herself strongly when she said, “Because I can use those and I would”.

Carol indicated that she did not record the PD that she had taken part in, and yet she was willing to pass ideas on to other people whom she though appropriate.
"I do pass things on! For instance, when I went down to the science conference last year, I gave a lot of things to Tegan about how to keep fields and all the different things that were available for Ag Science. I passed some things on to Jason. I tend to hand things around, so I don’t use everything myself. And there are some things that are totally useless for everybody because you’ve done it before anyway. And you think, ‘I know that’, but I use some things, many things…. I guess PD is such an infiltrating type of thing because as much as anything it starts to get you thinking."

Here she is indicating how PD can affect her own person. It gets into her mind and “starts to get you thinking”. This “infiltrating type of thing” has the subversive effect on existing ideas and practices and is probably one of the most important aspects of PD. A comment again on her back to her experience in genetic engineering program illustrates her purposes and dispositions:

“I infiltrate it into ideas. For instance, when we were talking about the genetics one I went to after Christmas, I’m going to help Debbie do the DNA extraction in class; with my Year 9’s I have been talking about how cloning is really a very old thing, which is what we were talking about before. I’ve been talking about cell death, which I learned there. With my Year 8’s, even in Maths, I’ve been talking about the biology with regards to the maths. Even with my year 9’s I’ve been talking about different genes—it just comes out! It’s not ‘I learnt this and this!!’ I learn it, remember it, then use it.”

Her statement, “I learn it, remember it, then use it” is fairly profound. This PD was not just a how to teach program, it also introduced new knowledge that was exciting and dramatic. Her use of “I” continually indicates a strong social and personal positioning. For she has indicated that she will learn things that she finds interesting to her, and is then able to relate it back to a number of areas of teaching, not necessarily that for which it may have been intended.

A brief comparison of the initial interviews with Jason and Carol indicates that they are both very professional people, yet Jason is probably more of a private person and less willing to commit himself. Carol extensively used “I” whilst Jason’s use was much more reserved. Both
indicated a need to have regular PD and the need for follow-up. Whilst Jason expressed a yearning for classroom-based PD, Carol indicated that she preferred PD activities that kept her up-to-date and ‘alive’. Both were interested in improving their competencies in the use of technologies in their teaching and both indicated a problem with normal time allowances for professional development.

**Carol: The Second Conversation**

Carol also took part in the extended PD program offered by the Department of Education. Unlike Jason, who claimed that he had gained quite a lot out of the PD in the area of refreshing his knowledge and gaining some new ideas, Carol claimed:

"I didn’t find that it was very successful, but I did enjoy the activity as a group. So I actually didn’t get a lot out of it except maybe a reinforcement of what I felt...It reminded me of a lot of things I’d forgotten. It sharpened up my practice. Even though I knew them I wasn’t always doing them."

While enjoying the community relationships she didn’t find the exercise stimulating. Rather than any new ideas she was reminded of things she already knew she ‘should’ do but often didn’t to make teaching more effective.

The conversation continued:

M: So did any of your teaching around that time seem to change at all?

C: I did do one session straight after that which was very different. When I was getting my year 9’s to study for light, I gave them all six blank pieces of paper and said ‘write six words you can think of on the topic, any six words’... Then we shuffled them and I handed out six different pieces of paper, we used those six pieces. Everybody had to have all their six words on the board with explanations. And everybody got at least two turns to put something on the board. And in the end they
really appreciated it and they wouldn’t let me go....’I’ve got another word, I’ve got another word…”

M: So the kids actually became a bit excited.

C: They wouldn’t let it go until it was completely finished.

This again indicates that Carol did benefit from the PD since she used some of the ideas given in the sessions. This meta-cognitive strategy was used as it was presented in the PD session, and she found that the students were responsive to this task-oriented strategy. The intensive evening program did allow time for some discussion during meal breaks.

M: And do you think there was an advantage of seven of us from Bangarra actually attending? Do you think that was an advantage in some way?

C: I think perhaps as a bonding exercise, but I don’t think for the purposes of the PD it was.

M: So you don’t think the fact that we were able to talk to each other during lunch and tea, that that was an advantage?

C: No, because I think....well, yeah, I mean yes, we are short of time to talk, but really over lunch and tea wasn’t time enough to develop anything meaningful. So if you were trying to make that time, time for collegial discussion, no. There needs to be longer time, more quiet time.

M: Where do you think we could fit that in?

C: If I knew I would do it.

Here I am positioning myself by asking how the PD may have benefited our department by having a large number of staff present, but Carol’s experience has made her pessimistic. She felt that the staff had a chance to talk with each other, but didn’t feel that was an attribute of the PD exercise. She felt quite strongly that the time at meals was simply social, and that what I was seeking would require dedicated time and shared purpose. Her position is very similar to
Jason’s on the issue here but seems to disagree with some of Tegan’s optimistic assessment made earlier about networking -that it can happen anywhere even at meal times.

The conversation continued and came to talk about an aspect that the curriculum coordinator was trying to put forward about staff morale. ‘Lyn’ (our curriculum coordinator) suggested at a whole staff meeting that a day be given to talk about our courses to get them finalised or polished, and it would then follow from this shared experience that our morale as teachers and as a staff should improve since we will know where we are headed.

M: So do you think if the school was actually able to arrange the time we could get together, it would be better... rather than it just being one day things like Lyn was talking about yesterday, like horse-riding. Do you think maybe there should be other times set aside maybe, during school time?

C: Very hard to do because Lyn was correct in one aspect, we’ve become used to coping on our own. We’ve become immune to expecting help from anybody. And I think we’ve gone our own ways and that’s really hard now for people to put that aside and sit and share. That would take a lot of development. We’ve become so isolated.

Carol is here referring to Lyn’s comment on how we tend to teach in isolation and rarely share our knowledge with others. The horse-riding comment was made with reference to each of us doing our own thing and not sharing. Carol is admitting in her comments that she too is one of those teachers. And although she is willing to share some PD resources with whomever she feels may benefit from them; when it comes down to it, she also works in isolation. She is showing an uncertainty here that she does not really like. She wants to share, but is perhaps a bit reticent as well. She seems to be morally positioning herself here by her comments. She is making a judgement on the behaviour of the faculty, in fact the school, as a whole.
Carol kept coming back to improving science for the students throughout the conversation, though in the following exchange I initiated it somewhat:

M: How do you think we could implement change in the classroom, to make science more interesting for the kids?

C: That’s a rather difficult, 64-thousand dollar question, isn’t it?

M: Do you think it’s working together more, like Lyn was suggesting?

C: I think a happy class comes from a happy teacher. A happy class comes from a well-educated, well PD’d teacher. Basically that’s it — if you’re comfortable at what you’re teaching it fits in where it should fit — you’re well-resourced, you know your subject and you’ve had time to find interesting prac and who’s got time to play with interesting prac? If you’ve had time to plan an interesting prac, and you’re relaxed and fresh, you’ve got the enthusiasm anyway. You don’t need help to gain the enthusiasm if you’re relaxed. We are all good scientists, we are good science teachers, but we are just unable to work at our peak.

Carol repositions to being a confident, though still frustrated, member of the science department. She feels that a teacher’s attitude will affect the class, and that the teacher will be happy if they are well resourced and PD’d. However, she then puts in her bit about time again, “who’s got time to play with interesting prac?” She doesn’t believe that the teachers are working at their best, because of the time needed to prepare good lessons and prac.

In the following exchange Carol is almost defensive, and it is not really clear what she is saying. Perhaps the question could have been worded a bit better, for it may have been that which she did not understand. Carol comes across normally as a very confident teacher, yet here she seems to be floundering a bit, and seems to lack some confidence:

M: So, what actually motivates you when you are working in your class, and your class is working really well? Can you pinpoint anything that is making it work well?
C: I don't know how often my class works well! I don't know... I think if I enjoy a topic, it's easier for me to make the kids enjoy it. There are some I don't enjoy — but few.

M: Can you give me examples? Of ones you don't enjoy.

C: Ecology. 'Who cares?' I mean I'm sure it's extremely important, but it bores me to sobs. I can't help that, it just how I am. I'm more into the biology. I mean I even like physics better than that. And chemistry, that's exciting.

M: So your enthusiasms, or lack of, do you think that rubs off on the kids too?

C: I try not to let it, owing to professionalism. I do try very hard not to let it. I have to do extra work to find current applications and I think that's important. See, things I'm interested in I know all the current applications, because I'm interested and I keep abreast, but things I really detest I don't pay attention to, because I really don't like this very much, but that means that I'm not up to date. You have to be up to date.

Carol surprised me a little with her attitude to ecology, but on later discussion, she said she had it thrust down her throat at school and believes that we shouldn't have to teach it. It is not 'science' to her. Her theatrical experience came out here. Ecology as an area of science lacks dramatic power. She was very pointed in her dislike of ecology.

Carol has a reputation amongst the students as having fairly good classes. Her comment, "I don't know how often my class works well", could be just a comment made in passing, or it could indicate an uncertainty about her teaching. She may be looking for support from me and is attempting to position me as such. She maintains that if she is interested in what she does and then the enthusiasm will come across in her classes. She likes to keep up-to-date with new technology and computers and feels that to maintain enthusiasm PD should offer stimulation in these areas.
Part of my agenda of this interview as Carol knew was to gain some insight into her thoughts on the reporting of PD in the science department, and how this could be achieved.

M: So, as far as reporting of PD, part of the aim of what we’re doing is seeing if we can improve the way that PD gets reported. How do you think that could work?

C: I think that’s a monitoring situation. And I think that any reporting of PD needs to be done immediately after and I think that as with any PD allocation of time it needs to have a plenary session built into it. And if it doesn’t it’s inadequately planned.

M: So when I got you to record some stuff in a portfolio type thing... was that a lot of work?

C: Yes.

M: Do you think it would be worthwhile if you had time to do it?

C: If you were able to find time to do it, yes. But I should have read the question beforehand; I was unable to answer some of them because I had not been considering them while the PD was going ahead. So to be adequately planned you need to have pre-warning of what you need to get out of it.

I had explained how the sheets I had distributed could help with the production of a ‘portfolio’, and I positioned myself to defend my efforts, somewhat unsuccessfully.

M: I think the main idea is, if you do something, how do you use it in class or how could you use it, even if you don’t get the chance to use it, and once you’ve used it in class, then reflect on whether it worked the way you actually wanted it to work and kind of reporting in that respect might be useful.

C: Yeah, again, I think it needs to be structured into the time allowed for the PD. I think everybody needs to go to a PD aware of what they’re going to report on, so that they can actually pay attention. So that if you know you need to implement that in the classroom, you can be thinking ‘oh, this might fit in my year 9 science’, because it’s a lot of work to change how you teach using an entirely new strategy, within a week.

M: I didn’t necessarily mean within a week...

C: Oh, it almost has to be – while it’s still fresh. It almost has to be, because otherwise it starts to get implemented and you just slip back.
Now Carol is deliberately positioning myself. She is quite adamant that the reporting has to be done quickly if it is to be done at all, yet time should be given so that the reporting is done properly. I feel that perhaps Carol is thinking that I meant the reporting needs to be done within the week, which in fact would be ideal. However, what was meant here was how the information and ideas get implemented and does not have to be completed within a week. If a portfolio had been constructed, and one had noted down important points and ideas, then implementation might occur months later, when one has had time to reflect on and adapt these ideas to one’s teaching.

The conversation continues:

M: So, if things don’t get implemented, has PD actually been worthwhile?

C: Yes, oh yes. Ah, yes, because you think about and may implement little bits and pieces later on. Not as worthwhile....

M: So, as a reflective thing you’ll say, I remember doing something....

C: I keep thinking I’ve been teaching for this many years, I must be old and stale, but then you look back at how you were teaching in the beginning and you realise that things have changed. In the way you approach kids, and the way you implement new pieces of information and the way you approach marking and all that sort of stuff has changed. And it can only be as a result in growth of PD. But it’s because it’s gradual, you can’t pinpoint it. Again, I think PD is absolutely vital and very important even if you don’t implement it, it’s much more important that you get the message and it’s reported upon.

M: Is it possible to still maybe have some way of recording what we’ve done simply?

C: That’s a big stumbling block because I don’t think, in terms of all those phrases that were in your booklet on reporting, that’s not the way I process things, and I couldn’t for the life of me, relate what you were saying, to what I’ve experienced.

M: I think that’s all we needed to talk about that, which is what I’ve asked people to come and see me about, but...

C: But when?

M: Yes, when.
C: Yeah, so we have to find a simple reporting process where we stuck to dot points and highlights, where we didn’t get too wound up about focuses and that sort of crap, because really, in the end curriculum fads might come and go, but in the end, we get in there and do it.

We both seem to be in agreement that a reporting process needs to be simple but that time remains a problem in any formal reporting model. In fact, I probably changed her mind about what should be reported based on the interviews conducted.

The deliberate positioning that Carol shows in both of her interviews is interpersonal and she is willing to take some risk and ‘tell it all’ so to speak. Jason appeared more empirical in his deliberate positioning, and is perhaps more of a private person. Carol is enthusiastic for scientific ideas and is a social person who is more public in her opinions. Neither of them liked the idea of portfolios as a means of reporting or recording personal identity formation. They could see the benefits of reporting others’ views or their attempts to implement others’ ideas, but did not seem willing to do it themselves.

The Third Conversation with Carol

Carol still admitted to need PD to refresh and renew herself:

C: Yes... especially since things are always changing in the curriculum profile and the emphasis yes I really think you have to keep up to date with how things are shifting. STAVCON was actually very valuable this year! There was a lot of work on CSF levels 5 & 6, particularly in Physics and I came back very motivated!

M: While you’re talking about the Physics – you have enrolled in a course at Melbourne Uni for next year?
C: Yes ... that's a graduate certificate in physics and basically it's to update your level 6 physics understanding so that you're not teaching the kids something that's slightly out of date or slightly incorrect. But more importantly it's to get the applications, so that you can apply it not just to any technical knowledge you can find in the world around them like the circuitry in their home and their appliances and so on.

Whilst talking about the graduate certificate, Carol has begun using 'you' again whereas when talking on STAVCON she had used 'I' which indicates a position change. She is less committed to this formal certification program. However a repositioning occurs again in the following exchange:

M: Also, it'll give you basically a better background in an area you are not so confident in?

C: Much better background in that area!! It's an area I'm not very confident in AT ALL!

M: Yeah. That really takes away then that you used to do PD basically for senior classes, such as biology, so that would be a PD activity in effect...

C: Absolutely!

M: ...You would employ into your junior classes, more than senior?

C: Yes, I think also that is where the DEET emphasis is. I mean, in the last couple of years with the VCE changing so much, the emphasis has been in VCE. And now that CSFII has come through and the junior classes are changing to match, well naturally the PD emphasis changes. So I think it's a cyclic thing.

Carol seems genuinely excited about the idea of participating in the graduate certificate and accepts the DEET rationale that positions her as a junior physics teacher. Her background is in biology and she accepted in principle the social positioning of her labour and a way to improve the area of her expertise that was lacking. In the following exchange she talks of her need to continue with PD in Biology even if she is not teaching it at VCE level:
M: So you will still maintain your biology PD?

C: Absolutely. You've just got to - biology changes just so fast!

M: And how did your recent PD on Biology help you in the classroom?

C: Even if I'm not teaching biology at year 12 the gene technology is so rapidly changing and the students are so interested (in it) that if I don't have background knowledge when they do their debates on whether something's moral or ethical, then I simply can't go in the right direction.

On being questioned on the need for equipment and use of technology in the classroom her reply was quite adamant:

C: I think it's still very important. I think it's something that needs to be upgraded regularly. I think that there is no point in trying to teach technology and science to kids in 2000 and beyond with 1950's equipment; and I know we're moving a long way away from that now, but we just have to keep moving. And we have to be up to date with how to use it.

M: So our recent acquisitions, the extra TAIN equipment....

C: Very, very positive move, yeah...

M: Our little in-service thing that we did just the other day....

C: I thought that was very valuable. And it gives you an idea that you can do it, where to start and who to go to for help. (Laughs)

As with Jason, Carol also felt the benefit of being in-serviced by one of our own staff members on new probes and equipment that the school had purchased recently. Carol was actually over allotment this year. Whilst the base figure worked around was 23 periods per week, Carol had been teaching 24 face-to-face classes. On being asked about preparation time issue in preparing interesting classes her reply was:

C: We have been continuing... hopefully that extra period next year will make a difference. I also will have fewer science classes, so that will make it a little easier. I think having 5 practical science classes this year within 24 periods, was just too much! I don't think that it helped or was the best for the students that I taught.
M: Was it difficult getting the pracs prepared?

C: Very difficult, very difficult. Especially the ones that were on the Junior site. I think, in the ideal situation, there would be two full-time fully trained lab techs, rather than one and a bit, or one and a....

M: So the problem is still lying in the junior area?

C: To me it is. I still need to be able to ring up and say 'this is what I want to do, get it ready', rather than have to go around and hunt out what we've got and can 'make do' with.

I also wanted to discuss with her the reports we need to write for the PD coordinator. Her answer was similar to Jason's:

C: I think oral report amongst the faculty and I think written briefs should go on the meeting newsletter...so that anybody who's interested can read them in there. Yes, I think that the faculty's going to get more about of it than Mary will. If faculty members don't turn up to take advantage of those oral reports, then woe to them!

It appears that a report to the faculty is of much greater use than a report being filed away in a folder that nobody may look at.
CHAPTER SEVEN

Debbie
Chapter 7

Debbie

The third member of the focal team, ‘Debbie’ has taught at a number of schools over her career of fifteen years that has been interrupted with having a family. She has taught a mixture of full-time and part-time during her career, with most of it being part-time. She has been a part-time teacher with a 0.7 allotment at the College for the past five years, and is currently our Science Coordinator. She was appointed with this position during the progress of the research. At the time of our initial conversational interview, she did not hold any position of responsibility in the school, and was still excited at being given the chance to teach Year 12 Biology for the first time. Both Debbie and I have taught predominantly mathematics over the past few years. Again I feel that both Debbie and I get along very well and we share a feeling of mutual respect. Towards the end of this study Debbie had attained the position of Science Coordinator, taking over from ‘Geoff’ who retired.

First Conversation with Debbie

At the initial interview, Debbie appeared a little nervous, and requested to see the type of questions she would be asked before the interview was recorded. In fact part of my procedure was to allow the interviewees to view the questions prior to the interview.
The conversation began a little erratically, possibly due to our nervousness. The conversation began with Debbie being asked about her science teaching:

D: At the moment, um as well as Maths – it’s a combination of the two and I find Maths sometimes easier to do because sometimes it’s easier to do because it’s right and wrong and it’s an easier ticket.

M: So, are you saying it is an easier ticket because it’s easier to teach?

D: Say that again....

M: I’ll re-phrase that – is Maths easier to teach because it’s right or wrong and you don’t think Science is like that, or...

D: Sometimes I think Maths is easier to teach because once you’ve taught it, it’s very easy to fly by the seat of your pants and you just know the work and just go in there. But with Science there’s always new things and it just takes a lot more PD just keeping up with it all. And it’s also just more time-consuming preparing for the Science and all the correction and so on.

M: Yeah, so you find it harder to actually prepare for Science lessons then, in that respect?

D: Not harder, just more time consuming...because you really need to...to have interesting Science lessons you really need to put a lot of effort into getting your kids involved in them. And you don’t want the kids to be sitting around working out of textbooks – you want them to be doing experiments but also have the time to work out what the experiments were about...As far as that’s concerned I enjoy the Science but I find huge frustrations when the kids aren’t motivated in it. Whereas with the Maths they know what they have to do with the Maths and they therefore seem to be more prepared to work at the Maths than work at the Science.

Debbie’s positioning is more accountable than self-positioning in that she is concerned that I might not respect her as a science teacher. I do agree with Debbie in this case that the time to prepare for science classes is much more prohibitive than for maths classes. However, if one wishes to teach maths well good preparation is essential but as Debbie says, it is easier to “fly by the seat of your pants”. With science classes, it is much more necessary to keep ‘up-to-date’ since there are things happening in the science world all the time, but we rarely, if ever hear of new mathematical advances making headlines. Students also have the expectation that
there will be a ‘right’ or ‘wrong’ in maths, yet this is often not the main point with science. Depending on how the individual teacher works, there may tend be more correction in science than maths.

In the earlier part of this interview Debbie used the words like “you don’t want” and “you really need”, but later she uses the words, “I enjoy”. This indicates a change from persona of colleague in an accountive position to self-positioning. She may also have been feeling more comfortable as the ‘interview’ progressed. Debbie had expressed a personal professional concern, as had both Jason and Carol in their conversations, with students’ disinterest and general lack of motivation. I could have perhaps discussed that aspect of her response, but I didn’t. The purpose of the interview was to discuss professional development.

M: Debbie, as this particular interview is basically about PD activities... why do you take part in PD?

D: It’s interesting because all of the PD that I do, or that I’ve done over the past couple of years in particular is with Science and that’s tied up with the biology which is my first love. But I just think that with the Science you need to be more aware of the current events that are happening. You need to be able to network with other Science teachers and share ideas. I love walking around at the Science conferences and looking at the new resources and things like that and making up a wish list.

M: So, what are you actually looking for from PD?

D: Well, I want to bring back ideas, hopefully for me to employ in the classroom just some different experiments and activities and stuff like that. I want to broaden my general knowledge looking at other references and what have you, but I also want to bring back ideas of where all this is leading kids to. Like that trip to America I went with, to look at all the Monsanto applied genetics. I mean, that was just fantastic because it enabled me to come back to the year 12’s and just be really excited about what they’re learning now and how it can be applied later on. It’s the same with all that in Science, you can just let the kids know where the path is going.
Although she was teaching mainly maths at the time, her professional development was predominantly in the Science area. As with both Carol and Jason, she indicated the importance to her professionally to keep abreast of scientific developments. Of extreme importance to her is the networking with Biology teachers in other schools.

Debbie indicates her need to bring things back from professional development programs that she can use with students and satisfaction to show where those ideas may lead. Her husband works as an agronomist, and Debbie travelled with him to the USA to visit some agricultural chemical sites. She spoke excitedly about her experiences and related her knowledge of commercial developments in biogenetic engineering that she could present to the senior students thus making her teaching relevant to the future needs and interests of a grain producing community. The conversation continues:

M: So you are looking for your PD to make you enthusiastic?

D: To keep me informed. Absolutely. You have got to have enthusiasm there. If it's like a dried up old pea, they never take anything away with them. But if you can share the enthusiasm and be really excited with them and say "you are at the forefront of all this, and these are the possibilities and so on" and they soon think more about where they are going. And that's really important. You've got to have a ... you've got to be able to let them see what the big picture is.

Here Debbie corrects me. Her enthusiasm comes from being well informed. Enthusiasm (knowledge) is what she sees by implication of the illocutionary force of her utterance of "you have got to", to indicate enthusiasm or passion is what is often missing in day-to-day teaching in the school and in teaching generally. Her analogy to a dried-up old pea is quite forceful in expressing an implied antique of teaching or teachers and can be related to dead seed that is unproductive. Her body language and tone of voice indicated a strong belief in what she said.
In the following segment, Debbie talks about her best conference experience. She speaks of the same PD that Carol attended at the Walter and Eliza Hall Institute in Melbourne, and how it was of benefit to her:

M: So, what's your favourite type of PD?

D: Oh, definitely hands-on workshops.

M: So, why would that be?

D: Because it brushes up my own techniques and again let's me be more receptive in my teaching – just getting to kids to do it themselves.

M: What was the very best PD activity that you've ever done? ...In your opinion.

D: Basically the genetic conference at the start of the year, we had a whole week at Melbourne Uni out of school time, and not paid for by the school.

M: And what did you actually do there?

D: It was learning a lot of techniques with re-combinant DNA and just how the traces of DNA can be taken from one organism and put into another. It was just pretty good because it was a bit of a blast from the past doing University level genetics and microbiology and biochemistry again and just really freshened up my knowledge of it all and made me really excited about all the work. So I think if you attend PD and it gives excitement to yourself and you have to be able to pass that on.

M: So how did you actually use what you learnt back in the classroom?

D: Well, basically teaching the year 12's this year, I just keep referring to that conference all the time and I refer to the trip I had to America and the applications of all the genetics and so on, and just the fact I know that some of the kids in my biology are going to do really, really well and that they are going to go into a Science field.

M: Is that because you've made them interested, do you think?

D: I would like to think that I've had part – something to do with that, but the kids that are very good at what they're doing and they're interested in that field anyway – they're good at Maths and Science. But it's been really nice when the kids come up and ask you more questions about it and you can see the glint in their eye. It's like a light-globe's been switched on.
Debbie attended the genetics conference at Carol’s insistence and I recall Debbie remarking that she was not at all thrilled at having to use her holiday time to attend a professional development activity at her own expense to prepare for this new topic in the VCE. Carol and Debbie felt the experience was too specialized and technical to share adequately with others in the Science department. They talked in general about what they did, but not in detail.

Perhaps they felt they could not share the enthusiasm with persons who had not shared this experience, or perhaps it was their experiences of communication in science departments where it may not be an appropriate place to talk about ‘peak’ experiences. For whatever combination of reasons, their experiences although obviously profoundly important to themselves, could not be shared with other staff. Highly effective PD is evidenced in this discourse as a life changing, private experience that is difficult to share with others.

Debbie’s choice of storyline to account for her own belief is about the motivational gain in student knowledge—a sudden enlightenment switched on by her new “power” in the “glint in their eye” replaces the dullness of the bored students. The conversation continued:

M: How useful are the school PD days that we have, do you think?

D: I don’t find them useful at all. They’re interesting… That day that we had with the personality…(hesitates)…

M: Multiple Intelligences?

D: Yeah. That was useful, but that was something that was um… you could do that in a very short period of time – looking at the way kids learn. I mean, I did learn a few things from that, but I must admit I haven’t applied a lot of it.

M: So you haven’t been able to use that type of thing in your classroom?
D: No. I mean, at the time I was really interested in the different ways the kids learn. Oh, actually I guess I have because this auditory visual kinaesthetic idea – I've heard people talk about it but I've never really picked it up before. So that was good, I got to that a bit more. And I use it on my own kids at home too.

M: So it has been useful.

D: Yes, it has been useful.

Debbie repositions herself in the course of this episode. Many staff have commented in passing that they would prefer to pick their own professional development rather than have a PD program and its ideology thrust upon them. As a result, Debbie perhaps gave what she thought was the consensus view initially and later presented another persona as the autonomous professional connoisseur of PD in this conversation on the whole-school PD day on ‘multiple intelligences’. Debbie’s thoughts on this are obvious from the following exchange:

M: Would you like to be in control of your PD or have someone else in control?

D: I'd like to be in control of it. I guess that way though you are restricting yourself because you limit yourself to things of your own interest, and sometimes it’s good to broaden it a bit by compulsory actions rather than choice.

The following exchange showed that Debbie was also unaware of the forthcoming SET extended PD program. Faculty meetings fall on a Wednesday, which is her day off. This is another problem for improved communication in our science faculty. In this exchange the change in positioning is fairly obvious as the conversation continues. Initially I control this segment by informing Debbie of things happening locally, possibly dealing with changes to the VCE in which she has a particular investment. Later she reasserts her authority and power
to the conversation and cuts me off when I say, "In my opinion..." to continue her line of thought "...There are two aspects of PD..."

M: Do you think PD should be short, sharp sessions? Over a period of 'X' amount of months, or an in-depth intensive course. For example in Science in the next couple of months we are going to have some PD - it's going to be fairly intensive, but it's going to be like 2 hours tonight, and in another week there might be another 2 hours, then another week another 2 hours. Here in Horsham.

D: Here at Bangarra?

M: Yes, here in Bangarra.

D: Is that to do with the VCE changes?

M: No, it's not to do with VCE changes. Technology in Science.

D: Things like that would be good, but again it depends on how it is done.

M: So, just on your experience do you think short, sharp sessions over a period of time would be useful or do you find that your intensive workshops that you did earlier in the year was much better - because you were there?

D: I think the intensive aspect of it is terrific, because you are there for a week. You were with people for a full day 5 days in a row. Just the conversation we had with other biology teachers, you know. Aside from the actual activities that we did, there was just so much conversation at lunchtime and dinners that we had and stuff like that. All of that among people who teach biology in schools and the different problems and stuff like that. Which is a different thing from PD but...

M: It is PD. In my opinion...

D: That's all right. There two aspects of PD. There's the polishing of your own interests, refining the things that you do and broadening your knowledge and all that extension and stuff like that. But there's also the networking. And they're two very different aspects of PD. The networking is just so important and that's why having an extensive and intensive PD like that one is terrific because it covered all aspects. But it's also something that, because you put it all into one block, you need a re-visit to it, because the...(long pause)

M: So, in some respects, would an intensive thing over a period of time be better, rather than just one week.

D: No, you probably need one week three times a year. You can't just have one week or two days of PD for a whole year. You need to have it ongoing.

M: So you need support and ...
D: Yes, of course you do. And you need constant feedback and you also need topping-up. And to have the Science conference at the end of the year, the kids just think, "who cares" and by the time you've started the next year, it's too far back again. I think we need more intensive stuff more often throughout the year. And I might be burnt alive when I say this, but I think school holidays are times when teachers could use the PD like Carol and I did. I mean we all love our holidays but...

In this exchange, I feel that our relative positioning changed a number of times. Initially, Debbie had no idea about the forthcoming PD, and listened (momentarily concerned that she had missed something) to a very brief description of what it might be about. She returned to her 'peak' experience of intensive PD relating to the sessions she had taken part in at the Eliza Hall Institute, and again placed a huge emphasis on the importance of conversations and networking with senior biology teachers from other schools, and reveals that she sees PD in terms of keeping up-to-date in her field. She reasserted her moral authority over the conversation by talking over what she saw as my 'correction' of her view and offering a formal overview of the two aspects of effective PD: self refinement and intellectual refurbishing.

She positions herself as being strongly committed to self-improvement, while others were relatively less so. I pressed Debbie on the issue of documenting PD:

M: And lastly, just how do you actually record PD? Do you keep a record of what you've done?

D: I do, mentally.

M: Do you think there might be, could there be a possibility that maybe, if you wanted to share what you and Carol did in Melbourne, that you could have had it documented somewhere? ...Could your experiences have been written down somehow? Would that have helped other people?

D: It could have been. It's interesting... that particular conference is one that not a lot of people are interested in outside those who are teaching it. I mentioned the
conference to a few people and they just laughed about it. I mentioned it was going to be run again next year and suggested that other people may be interested in going to it as it was just fantastic, and the general feeling was that I won’t be teaching year 12 biology therefore I won’t need to – you know, I wouldn’t go.

M: Yeah, that was a specific one, so it probably wasn’t a good example, but what about say a Science conference? Um, you go to a really good session, is there any documentation you make for what you’ve done, or not?

D: If I’ve been to a really good session, I’ll keep documentation there. I mean, when I say ‘mentally’ I was being....but I mean stuff like, good sessions I’d make notes and keep them.

M: Would you refer back to them?

D: The really good ones will give you resources, and I’ve brought them back and shared them around, made them available to the teachers.

M: So – verbally or... probably verbally?

D: Well, verbally I’ve told them about it, but just for example the two booklets for investigation of ecosystems that can be used through years 7-10 and one year 11, I’ve let quite a few people know about those and they’re on my desk and are available.

M: Thank you Debbie. That’s all I want to ask you at the moment.

In this final exchange the lack of communication in the department is again mentioned. I was not surprised when Debbie said she kept a ‘mental’ log of what she had done. When I say ‘mentally’ I was being aware that she was being slightly facetious. She knows that I had argued for documentation but thought this an unnecessary burden. Staff have not been required to record what they have done in the past, and I felt as a result it was quite obvious that important insights were lost. I had insisted that even those who go to attend a particular activity or conference couldn’t recall all aspects of that activity even a week later. Only some points are remembered, and if one has not had the chance to use what one has learned soon after an activity then these also seem to get ‘lost’, and old ‘safe’ practices seem to persist. This was my position. Debbie clearly did not think her colleagues could be interested in her note if she made them. It seemed that she collected handouts that she saw as resources, which
she would be happy to share. She clearly saw PD and learning what and how to teach as an essentially private journey with occasional serendipitous intersections with other teacher’s interests.

One’s enthusiasms may threaten others who may resent feeling less committed or ‘good’. Laughter may be a light-hearted dismissal of displayed passion that one cannot join or sour. Debbie did not seem to resent her colleagues laughter at her biologist’s down-to-earthedness in her revealed self.

**Second Conversation with Debbie**

As with Jason and Carol, Debbie felt that at the extended PD program organised by Monash University, she had revisited techniques and methods that she may have ‘forgotten’ and felt that the ‘bonding’ between the staff of our school that attended was positive. Her emphasis lay more on the people side—the conversations and the sharing, whereas Jason showed a stronger interest in the actual techniques and methods used.

M: Regarding the recent extended PD that we did, do you think it was actually successful?

D: I do. I think it was really good to share a lot of the different techniques that we use in the classroom and different ways of motivating the students I think is really useful.

M: So do you think the fact that it was extended over 5 or 6 weeks was beneficial as well?

D: Yes, it was. It wasn’t the length of time; it gave us an opportunity to get a lot more out of each other. And to bounce ideas off more and also to trust each other and to listen to each other’s ideas. Sometimes in a group of people you don’t know you tend to sit back and watch what other people are doing and listen to what
they are saying without necessarily putting in yourself. If it's a long period you tend to get to know people a bit more and give them more credibility.

M: So having a number of the Bangarra staff there, I think there were seven of us, do you think that was an advantage?

D: Yes, I think that was great. I think our science department has really benefited from it. The bonding of us as a team, and people are working more as a team than what they were previous to that.

M: I know I personally found that we'd often be talking about what we had learnt, even the next day.

D: A combination. A lot of things you may've learnt or experienced earlier on in your teaching and it just reminded you of it and got you going again -- in the right direction again, and some new ideas. And just because there were so many people doing it, you want to try ideas so you can discuss it again and this gave motivation to do the new things or re-visit the old habits.

In this section of the interview Debbie is speaking very positively about the sessions. She has positioned herself quite strongly here too, when she used words like 'I think it was great', and, 'I think our...". She felt safe and positive, and her use of words like 'trust' and 'team' indicate her belief that the activity was worthwhile for her. I have been positioned to affirm myself strongly here. Debbie believed that the fact we were able to talk freely and share ideas, enabled the faculty to work together more effectively. I share the feeling of the effectiveness of those conversations.

I asked her about a session that she felt might have been particularly effective and she replied immediately,

D: The free CD! (Laughs)... Let me see, I can't think of any one particular instance but I think the development of the model for group work was really good. Getting students to work in groups. We tend to forget to do that in science sometimes because we're so focused in getting through what we need to get through in a period of time, and as soon as you put kids into groups to do group discussion or group activities you never get through as much as you want to, but it's really important because it just -- they learn so much more from each other and bounce their own ideas around in smaller groups. Is that what you mean?
M: Yeah. Do you think there were any sessions that needed more time?

D: Yes. The session on learning technologies where we had all this wonderful array of equipment that we could use in our classroom. Just because of the limited facilities that we had it was very difficult to get a lot out of that particular session. If we’re all hands on at the time, and over a longer period of time to try that, those particular pieces of equipment to actually use them, and if we had the equipment back at the school too. I mean it’s all very well to say here’s all the technology that you can use but the school has to have the facilities when you get back to the classroom. And we all think we would have benefited that night each having our own computer or our own camera and learning how to load the photographs on the computer. Enhancing images and things like that. When it comes to hands on stuff, you can’t do that sufficiently in a couple of hours.

M: So if we had more hands on stuff people might be even more willing to use them in the class.

D: I think so, but you can’t learn how to use all of that technology just by listening, you have to actually be doing it, and you have to be coming back to the classroom, and in your preparation time using it too. So obviously there the funding for schools is a huge issue too. It’s all very well to have the PD but you have to be able to apply it.

Whilst Jason had remembered the Predict, Observe, Explain and other similar practical techniques, it was interesting to note that Debbie had recalled the group work as having special meaning.

**Debbie’s Third Conversation**

Debbie had recently been appointed our new Science Coordinator two weeks prior to this third conversation and she now has a new authority to position others. Debbie pointed to ‘changes in the Department’ evidenced by the enthusiastic collaboration in re-writing certain Year 10 Science units.

M: Debbie, one of the things that you commented on from your interviews from nearly twelve months ago, is that you needed time to put into having interesting
classes. Is that still the case - that you really need time to make your classes interesting?

D: It is the case. I think that we need time to work together as teams in each of the year levels to get exciting ideas going, and we can all follow the CSF and do what we need to do, but to get better ideas in there it helps if you have that time to work with the other teachers. And you don't often have that except with what we've been doing in the last week. It's been great and everybody's been really enthusiastic with the day and a half working with the CSF and the amount of feedback from everybody has been really positive. Everyone's getting more enthusiastic and it rubs off!

M: It does, yeah. I just noticed that people seem really happy when they're working together and all that.

D: Yes. And at the end of Wednesday's session all the groups just said we need to keep this going and we need more time on it. Everyone was really enthusiastic about getting back together early next year, and using more time, even in faculty meetings, to work on what we've been doing. That's getting excitement into your lessons in a broad basis, but it's still the same with the individual classroom.

Like Jason, Debbie was convinced the science faculty staff were working together well and the enthusiasm was catching. The time allocated for course development was felt to be highly productive.

M: So...originally...you said sometimes it's easier to teach maths than science, because in maths once you know the work it's easy to teach; whereas in science you've got to keep being updated all the time. You need time to keep updated. You need time to prepare your interesting science lessons and all that. So do you still find that?

D: Yes. I mean, you can teach both maths and science by the seat of your pants, but. ...But it is more difficult with science because there's so much, so many current news issues are always coming up, that are applicable to science. And if you haven't been listening to the news, you haven't read the newspapers or magazines that come out...you miss it. And a lot of the time the kids pick them up. And you just do need that time to share, or find out about these things.

Now Debbie is saying that one could teach both maths and science 'by the seat of your pants' but earlier she had applied that saying to maths only. She is now clarifying her earlier statements more by again specifying the need to keep up-to-date with science or else the students may catch one out.
In the following exchange I am deliberately positioning Debbie by positioning myself here suggesting to her we both have some frustration with our classes:

M: You did say that you really get frustrated when the kids aren't motivated. I know that - I think that still would be the case. Is there any way that you have found that you now get around that frustration?

D: Um, I do still get frustrated, particularly with kids who won't give anything a go. They just sit back and refuse to try something new or have a go at an experiment. They just sit back and say this is boring and they haven't even got out of their seat. And that's really frustrating, but I just really work hard on that in the classroom and I really try and get kids involved a lot.

M: So what do you do with a kid like that?

D: I literally get them out of their seat and say 'come on over here' and I get started with them.

M: So you help them?

D: Yes - I get them going - put a bomb underneath them!! (Laugh) I try to get them going and talk to them about it and talk about why they're doing it and what the relevance is, and try and show it to them in a non-threatening way because kids will get their back up. I just take the attitude that if you can be friendly in the classroom with the kids, the kids will recognise that they're not being pushed into doing anything, it's just all reasonable.

Debbie is making use of her personal 'I' here and as such is stating her belief quite powerfully that students will work well if there is a mutual respect.

I mentioned her need to keep up-to-date with current issues, as she had previously mentioned. She was very enthusiastic about the staff from a neighbouring school sharing with us. Hatfield and Bangarra are both teaching robotics next year and have decided to have some informal competitions between the schools.

D: ...We're very isolated here and I think it's great to go to State events, when you can network. And this year at STAVCON was great because we got in with two Hatfield teachers and just sharing some of the things that they do and even though they're only 30 miles away from us, we haven't shared resources with them. And they're intending to bring over some Year 9 students to one of our events and just I think it has a lot of
potential. But that wouldn't have eventuated if we weren't at STAVCON together, and that's where your networks are really good.

One of the sessions at STAVCON that stood out for Debbie was on plastics. She explains this briefly and then refers to our recent time off for course writing:

D: Recycling of plastics. It was just great! It really gave me an insight into how we can deal with the year 9 topic on man-made materials in a more interesting way. I think ours is very flat. And when you're talking about excitement with PD, this week has been really exciting because we've had staff come up with stuff, they've really enjoyed it. And a couple of teachers, before it, they were not looking forward to working on the CSF but by the end of it they thought it was fantastic and they really thought it was good. But I think that's a really important aspect of it, that we did it as a whole group and not as little teams of Years 7-8-9 or 10 people. So you can see on the board in front of you, that was all done - everybody together. And then when we did break up into our own Year level groups we all stayed in the same room and had a lot of interaction between each other, just clarifying things for different Year levels. And so that interaction with other people was really good. It was good to have enthusiasm at this time of the year. It was just great!!

Since she has mentioned this earlier during this interview it obviously had meant a lot to her, and I feel that she believes this is one of the steps in helping to improve the communication in the faculty.

M: You've also said that you like to do hands-on PD, where you're actually doing experiments where you can take them back to the classroom and get kids enthusiastic because you've actually experienced it yourself.

D: Yes. You've experienced it yourself or you've seen other people do something that you think 'yes, I can easily do that'. Even on Wednesday afternoon a few people shared some of the activities they did at STAVCON and just a few different ideas and that's good!

M: When you had them together talking about what they'd observed, I think that was good and very beneficial.

D: It was. One of the things, if you don't mind me digressing, (M: No, No) one of the things in the interview, was about having the portfolio on PD, and I don't think that I'm all that much different from other teachers in that it's really tedious having to go and write down a summary of the PD's that you've done. And as a faculty what we did Wednesday afternoon on a minor basis I find this more useful, than actually having a portfolio. These are my notes I said, and people would totally not read much of the portfolio, and even when teachers come back from PD and they put information on the table, other teachers are just so busy that they just very rarely take up the material and read it, where having them in a group like we did, reporting on it verbally

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is much more interesting and other teachers are more prepared to listen and take on
board what's being said. And also take on ideas about what particular activities may
be applied in our school.

Debbie reiterates what Jason said about portfolios. In reflection I think they probably had
talked together about the portfolio reporting process. Both of their comments were made in a
similar vein, and both were added in to the conversation without being suggested by me.
Debbie is making her personal Head of Department position quite obvious to me. I felt in
some ways positioned to justify the use of a formal PD report.

M: After you do a PD activity then, do you find even having to write Mary's little
thing a bit tedious? You know how you have to write a little blurb?

D: Yes. To be quite honest I've only done one of those this year because it is tedious
and no-one, I don't believe anyone in the school would go to that folder and read it. I
personally think it's a waste of time. I know what Mary's doing and I respect her
wanting us to do that, but life's been busy.

M: I feel the purposes of the portfolio aspect and all that sort of stuff is it's meant
more for yourself rather than the sharing aspect. People could actually have a look at
yours if you were willing to do so, but I think the whole thing behind it was that you
could actually say 'oh yes I did do this and I did think that and this is how I could use
it'. Because sometimes you actually forget unless you actually document it and
through writing it down sometimes makes people remember. I mean we're not in that
culture here at the moment because we're not used to doing that and that's possibly
why the teachers find it tedious.

D: I also think the format of that report doesn't lend itself to what you're suggesting
that it should.

M: Yes.

D: There's not enough scope in it. And it may just be documentation so that people
are held accountable for the PD that they do.

Here Debbie is emphatic about not wanting to document her PD in a written format. She
speaks with new authority and her response is quite pointed:
M: ...On another tack, you'd made a comment about this in an earlier interview...do you still think that doing PD in the holidays could be beneficial?

D: I do. It has to be great PD that people would want. People wouldn't do it if it wasn't. Again there's the science post-grad certificate in physics this year, there's two sessions in holidays and two on weekends. So I guess what I'm saying is, I'm prepared to do that - occasionally, but it would be unrealistic of me to expect all staff to be prepared to do that.

M: So you're doing the PD, the certificate in Physics at Melbourne Uni to give you a better background in physics?

D: Absolutely. Physics isn't my strong area and it gives you confidence and upgrade my skills. And I need it, there are so many kids in Year 10 and in the electronics component, they've been studying electronics - they're miles ahead of me anyway. I found that two years ago when I taught the year 10 unit - scary, it was yeah. And it's not good for me to be in that position because you're not giving kids the best.

I queried her on how she could share what she may learn:

M: So when you and Carol go away and do that, do you think you would be able to bring back some of your knowledge to us?

D: Absolutely!

M: How do you think you might share it?

D: Probably by practical activities. I think we would do that as they're going to be a lot of hands-on workshops in it, and the idea of it is to bring back information and activities to the staff and to help the staff in general, not just us on a personal basis. That was one of the points on the application form that said, sharing information with the rest of the science faculty. And whether that's done again during learning area meetings or...

M: A special time might be better?

D: Special time, time release, or curriculum days when we divide into our faculties. But there would certainly be room somewhere to share it and I think it's really important because particularly the shift in the Year 10 physics, and the Year 9's can be threatening for a lot of teachers, because a lot of teachers are not trained in physics.

M: I have some Physics background, but it's been so long ago that I would not want to feel like I was an expert in that area any more.

D: I was interested in the comments the other day though about needing some of the genetics into our Year 9 course, that Mike just went 'I don't know anything about that, ah, I don't feel comfortable with that.' And I just said, 'Well, that's exactly how I feel with the physics!' So even though at the moment they're concentrating on the physics, really for teachers of Years 9 & 10, the genetics is a big area and particularly
with the changing technologies, that we should be updating our teachers. Constant change – things are changing at such a rapid rate. Whereas with physics, there is some stuff that people don’t know. But it is not changing. Not like the genetics area. Maybe next year the Department (DoE) might feel the need to do something for teachers who aren’t trained in the genetics area.

This exchange was interesting as the positions between interviewer and interviewee changed on a number of occasions. I left an opening when I admitted to not feeling ‘an expert in that area’ with respect to Physics and she came back with an example relating to a Physics teacher feeling uncomfortable with Biology concepts. We may all be teachers of science, but each of us has an area of expertise that we need to share with those who may not be as competent as ourselves.

The conversation continued with greater parity with Debbie doing more initiating in the conversation:

M: Another thing that really came out that you felt after that S.E.T. PD that we needed more time on learning technologies. Now a lot of us have done a few things since then in the last 12 months, and even with Mike the other day showing people how to use the probes; did that make you feel more comfortable with using those pieces of equipment?

D: I think we do need to do more of it. John Walter was going to organise something for us this year - I spoke to him about. He was going to organise a course for us, specifically on learning technologies. Because there’s a particular course in a few schools in the City and I made enquiries about how we could get it up here and Jason said leave it with him and he’d organise it.

M: And it hasn't eventuated?

D: It hasn't eventuated.

M: We should pursue that?

D: Some teachers think that maybe we don't need a full-out session like that; we just need to train each other because all of us have got the skills in a variety of equipment. And maybe we just need to spend more time. The reason I wanted to work with John Walter for it was because the other courses were done coming from the region, and that's why I was asking John what the region here could provide for us. That's his job as far as I'm aware.

M: So have you used learning technologies in your classroom?
D: It varies. I suppose taking computers in, data projectors, digital cameras, Flexi-cam. I'd like to do more. I think taking the laptop in and using data projector has got a lot of scope for demonstration of various things, and I used it for the physics component. That was terrific. The kids really enjoyed it too; they were able to see it on a big picture. Just being able to see a computer screen as a big picture.

M: It's a bit better than just chalk and talk, isn't it?

D: I was really interested! I was in a meeting one other day with some of the teachers and they were saying data projectors are useless because none of the rooms can be darkened enough to enable them to use them effectively, and I totally disagree. Those science rooms on the junior site weren't all that dark.

M: And you could still see it adequately?

D: Absolutely. And in the library when Jason was doing a science session, the kids could see it all. The room doesn't need to be as dark as what some other teachers are suggesting that it needs to be.

Debbie showed her impatience with staff in other departments who were not using the data projector. She is initiating and controlling the direction of the conversation. Her position in the local moral order has changed with her promotion to Head of Department.
CHAPTER EIGHT

Tegan
Chapter 8

Tegan

At the time of the research, 'Tegan' was in her fifth year of teaching. This was the second year she had been teaching at the College. Tegan had previously taught in a small rural school. Her area of expertise is Agriculture and horticulture, but she also teaches Junior science classes. She is also involved in teaching non-academic VET (Vocational Education and Training) subjects at the senior level. She had been a Science coordinator at her previous school, and towards the end of this research held a position at Bangarra College of a Year Level coordinator. She is a young teacher with a vivacious personality and is willing to 'have a go' at things that she feels will benefit her teaching and her students. Tegan and I have team-taught agriculture and horticulture at this school and again I feel that I have a good rapport with her.

Tegan's First Conversation

'Tegan' is a young teacher and early in the interview refers to her students' enjoyment of practical classes:

M: So when you do PD, do you look for PD that is going to help you in that area (practical activities) or not necessarily?

T: No, not necessarily. I don't find that I need a lot of help in that particular area. It's more the knowledge behind it that I need help with, well, not help but...improvement...improving my background knowledge and updating prac. Because a lot of the prac that I used to use are outdated now and not allowed to be used anymore. Like the cheek cell prac and stuff like that, and just trying to keep it interesting - adding things to my repertoire and extra knowledge, interesting facts, current issues.
Tegan here is making a point that she may be seeking a curriculum solution but finds that many of her favourite practical exercises and demonstrations have literally been banned for health and safety reasons (often with little or no professional consultation). She feels under pressure to reinvent herself. As with many of the other conversations she is locating herself within an essentially moral space of ‘oughtness’ in ‘I ought to be able to control/engage the students’. In the following exchange she mentions the need for networks with teachers in other schools in her identified area of responsibility - agriculture. Again this is to do with strategic knowledge of the examination super bureaucracy to which she is, along with her students appraised. She needs the personal interactive scenarios associated with conferences.

M: So, why do you actually take part in PD?

T: Most of my PD has been in Ag not Science, and the reason I’ve taken part in the Ag PD is mainly because I like the network. I don’t think I need to re-invent the wheel and if we can actually get together and put your resources together that’s a lot better than trying to be out on your own. And also because the Ag conference has updated knowledge, like the VCE network meetings we’ve just had recently. Makes it a lot easier from a teacher’s point of view to get all that kind of stuff together those courses together than if you try and do it by yourself. You just haven’t got time.

M: So what would your favourite type of PD be then? Would it be the conference where you can network with other people?

T: Yeah, my favourite kind of PD is conferences. I jump up and down to go to them! Because there is current information and it keeps you up to date, and you can catch up with all your network buddies and trade information and secrets and stuff.

Her comment ‘I jump up and down to go for them’ is a strong statement showing her need to position herself with the school management in the local moral order to get this type of PD. Getting the essential knowledge on how to locate herself as teacher with her class in interpreting the VCE assessment rule is vital when she is the only teacher of her subject in the school.

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M: What would be your best PD activity that you remember doing? It doesn’t have to be Science in particular ... the best PD activity that you’ve done. Or the best experience that you might have had.

T: I reckon, well it’s hard to say because...(Pause) Like from a Science or Ag perspective, going to Dookie, or Longerenong or Glenormiston has been the best because you get where the kids are going to head, and they’ve all these great resources and you can go out and have a look at pig-sheds instead of just talking about them and really hands-on sort of stuff. But, in terms of educational I did a certificate in education on counselling skills – that was really good. Gave you a different kind of perspective on how kids think ...

M: So you’ve been able to use that in your class?

T: Oh, definitely. I’ve done counselling skills. I’ve done learning styles, mixed ability learning, all these modules out of the certificate of education (I think that’s what it’s called), and they’re been really good!

Here Tegan has said she likes to go to the tertiary institutions for her conferences since her students in agriculture generally end up in places where she has not been herself. She is not from a farming background. Her ‘hands on’ activities in agriculture literally mean getting dirty and tend to be vocationally oriented. She indicates that learning how she may help students at a personally level has been beneficial to her classes and relates to the vocational nature of her subjects. This is rough ground compared to the laid out paths or rituals developed in science teaching in the mainstream science subjects that the others have embodied in their own education.

M: So how do you actually think you will use what you’ve done in PD in the classroom?

T: Well, I actually don’t tell many people this actually, it’s a bit funny, – If I have two year 8’s, I will actually test the answers of theory on one group and use the other group as like a control. See if it makes a difference. So things like really going silly on mixed ability and then just sticking to the same sort of style of the other group, and just see if there’s any difference.

M: And have you noticed any?

T: Yeah, huge differences. You can really put a lot more work into flexibility within your assignments and the way you assess things – yeah, a lot of difference.

M: So does that take a fair amount of time to do?
T: No, it doesn't to be honest. I just find I can do it without thinking too hard about it. The actual write-up of the assignments so they are mixed ability is a bit hard, but trying to plan what you're going to do with doesn't really...

M: So you could basically adapt your normal lessons most of the time?

T: Yeah, it's not that hard to make up... like all you have to do is leave things open to negotiation. So instead of just saying you must do an assignment they can do an oral presentation or video taping or... open it up a little bit.

Tegan's secret story has positioned me as a confidante but also as a colleague who may be an ally in her attempts to change the local order in the science department. The mix of 'you' and 'I' presented in this section indicates her inclusion of me in her purposes.

M: Do you find things have changed even in the few years you've been teaching? ... In Science, do you find?

T: Well, it's a bit hard for me to say. Like changing from one school to another is a big change between attitudes and directions in which Science is going. Tandara (her previous school) seemed a lot clearer in their focus on what they were trying to do. Um, and their courses have been a little bit more set and concrete. Like there's still flexibility there, but it just seems one went after the other. Year 7 led into year 8 sessions, but here it seems a little bit confused at this stage. It hasn't really taken the CSF on with both hands. But the CSF is a bit strange in design that I've noticed... and you've had to really think from a different perspective to get the courses organised so that they're to the CSF. That's practically the only change that I could really give you.

Tegan implies a number of criticisms of her current department and school without being explicit. She seems to see the CSF as a sacred story in the school, which is taken too narrowly. In her opinion it seems that she would like courses to be much more straightforward than the design our school has taken with respect to fitting in with the CSF.

M: So do you think that PD should continue? Should there be more PD or....?

T: I think, yeah that we could not continue without PD. We all need to have our knowledge base upgraded because things are changing so quickly. Like Science and technology etc is just changing so quickly... and because none of us is in the industry we are sort of isolated from that, and it just takes so much work to try and keep up to date... and if we can PD it makes it so much easier and quicker for all of us to pick up that. But not only that, with CSF our school's really got to do some work on that to get the courses together.
She has come back to the CSF as a major problem in our school even though she has also mentioned other areas that she likes to improve on such as use of technology. She has positioned herself morally here since it is obviously of importance to her. She also stresses the need for the entire faculty to work together as a team:

M: So what sort of PD, as staff, do you think we should do at our school? Do you think we should do some more course writing or....

T: I definitely think we need course-writing but I'm not sure exactly how it should be run because I'm not sure the previous course-writing exercises have been successful in terms of the team effort, in terms of trying to make a sequential course that everyone's happy with. I guess I'm not sure exactly what type of PD in terms of how an activity could be run, but I definitely think we need course-writing and I personally think that I need as much PD in Agriculture as possible, being that I am not a farmer and I'm trying to teach farmers' children which makes life very difficult.

Here Tegan is reaffirming her position to get further PD in agriculture since as earlier she is saying that she is not in the industry and needs to be kept abreast of change in current knowledge.

M: Do you feel PD might be more useful if it was in short, sharp sessions over 'X' months or an intensive PD say over a week, where you say have 5 days of intensive PD in a particular area...?

T: I think to solve the problem quickly an intensive PD would be good, but in terms of teachers being happy about it, I'm not sure that teachers would, uh, well ... I would be quite comfortable with that but I think a lot of teachers would be unhappy about that situation and would prefer short, sharps, but at the same time you would probably have teachers missing from short, sharps whereas they are probably more likely to come to something that's fairly intensive, and it gets it over and done with I suppose. But it's not a short-term thing - it needs to be done fairly regularly.

Just as Debbie had said, Tegan also feels the need for PD to be continuous, particularly if a collegial of a structural change is sought in the cultural agency of teachers at Bangarra. It is not a one-off event. I try to position her to get some further information from her:

M: You need feedback and backup. Is that what you're saying?
T: Yeah, you need feedback but you also need to be able to do it again to make sure that once you’ve evaluated and everything your courses, you want to come back and do it again and make sure it’s nice and neat... and then you evaluate it again... and then you come back – like, it’s a constant process. It’s not something that can be done in a fortnight’s worth of PD. And the same with developing a knowledge base. I might think I know a lot about what I think are the current issues in farming this year but next year it’ll be completely different. And the same in Science. All the current issues in Science – genetics and things like that are just moving so fast. So we might need PD in current issues, maybe not need PD in it but be aware of courses etc.

Tegan is now using the ‘I’ grammar again to make a stronger statement on her position when talking on PD with respect to farming. More generally she is exploring the disruption of the relationship between collective knowledge and social structures in a changing world. How will the school and the staff know what to do when the social rules for good teaching change with new knowledge? We refer to tradition over customs changing but those are remembered in work practices. She would like her PD to be part of a continual process.

M: How do you actually record – do you actually take a record of what you do in PD? Do you actually record it anywhere?

T: No, I don’t really. Some of the PD activities I’ve been to you might actually fill in paperwork as you go, and in that case yes it gets recorded. But if you actually just turn up and take notes, then no I don’t.

Again there is a similarity with what Tegan and Debbie do with respect to the recording of PD. Most of it they say stays in their heads, rather than being recorded in hard copy. But how do institutions remember?

M: So how do you actually use those PD things where you just turn up and think that’s really interesting... do you actually use that stuff in class?

T: Yeah, I still find I use it. If I found it interesting I generally absorb it.

M: Do you think other people could use what you’ve learnt?

T: Possibly, but the things that I’ve learnt since being at Bangarra is Ag., and there’s no other Ag teachers at the present time. That makes it a little bit more difficult to pass the information on to interested people.

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Tegan is also saying here that for her PD is quite a solitary experience but she has to behave as if it is collegial since she is part of a community, accountable to it and reforming it in her practice. This perhaps explains her enthusiasm for the networks formed between schools, where the sharing of ideas and resources can and does occur.

M: For example if a new Ag person was coming in and they didn’t know much about the course, would they be able to benefit from some of the things you’ve done or the ways things are, probably not?

T: For example the student teacher who’s going to be coming in to do Ag next semester is an Ag student but he doesn’t know much about the course and I’ve got the new study design and so will give him a bit of a chat about how things have changed, and that’s what my last lot of PD was about – so I suppose yes in that way I will be sharing.

Tegan admits that she will be able to share with another if that person has the need to learn what she knows. In the following dialogue she mentions the lack of interest in the PD day our school had on multiple intelligences, and reacted in a similar way to Carol, yet she puts forward an idea that she feels strongly has worked for her at her previous school:

M: Do you find that the PD we do as staff useful... like multiple intelligences? I know you mentioned that before, or would our time be spent better doing something else?

T: I think getting together as a full staff is good. I think the last PD we had on the size of the brain and stuff was completely and utterly useless and a waste of my time. And I think that if people are going to have stuff like that that teachers think are a complete waste of time then it has less participation, but I do think, from previous experiences at Tandara we used to have a cluster PD day every year, and that had a variety of different lectures and things like that.

M: When you say cluster, is that the group of schools in the area that meet?

T: Yes. We would have a student free day and about 5 different schools would meet at Ouyen and you would have a variety of different lectures you might be interested in like mixed ability, like stress release, and things like that, which were general education issues and we’d also have a network meeting on top of that.

M: And you found that really useful.

T: That was really good. You’d fill in your survey. You want to do this, that and the other because that’s what you’d personally feel would be useful to you and they’d set you up in a little group and tell you what time to be there and you’d just turn up. You’d come and go to 3 lectures, a network meeting and then a VCE meeting and that’s your day. And that’s the most productive days I’ve ever had. Whereas here, it’s only our school.
You’re not meeting anyone else. You’re not finding out about what other schools are doing. I think that’s a bit, and the one topic we’re all forced to listen to I don’t think is particularly interesting and I don’t find it particularly useful. I don’t think playing classical music in my classroom is really going to work. Especially in the Ag shed!!

She mentions a technique suggested at the multiple intelligences workshop using classical music that we were told would improve the working atmosphere in the classroom. The music storyline, the pronoun ‘I’ grammar and her isolated biographical location in the Ag shed makes her act/actions very powerful.

**Tegan’s Second Conversation**

Tegan was also asked whether she had found the extended PD program successful. She explained how she was using some of the work visited in the PD to help with her classes:

T: Yeah, I thought that it was done too quickly. I thought it appeared that some of the primary teachers involved in the program particularly wanted to push it through so quickly but I understand it was to do with distances travelling etc. I’m using bits and pieces of it in the class, but not all of it’s working – it depends on the group dynamics really whether it’ll work or not.

M: Could you give me some example of where it is working really well?

T: Well with the year 8’s at the moment, I’m doing a magnetism assignment that’s all going to be student self-paced, straight forward…the students do everything basically – I just supply the resources and help them out when they need help, and guide them and everything else just runs by itself.

M: Are the students responding favourably to that?

T: Yep, definitely!! The best return of assignments by due date I’ve ever had!!

M: Really?

T: Yes, one class in particular. One that I told you about, I said they would be a bit funny; if you surveyed them they have probably got three (assignments) in, and probably have the rest in by lunchtime tomorrow I would say, but the other classes are really good ones which have really taken it in their stride and (pause)….

M: So what’s the difference between the class dynamics then?
T: Just one group is more prepared to work and less prepared to play up all the time. 8A seems to be a little more difficult to settle and a little more difficult to focus.

M: What specifically are you doing with them, than what is different to what you would normally be doing in the time?

T: Well, normally it'd be much more teacher-driven. Particularly this year I've found that I've started to stagnate in particular styles and not move around too much in what I'm doing in the classroom. The SET was good because it woke me up and made me remember things that I've learnt in Uni — and I would think yeah, that's right, and we'd try them again. Because when things don't work you tend to not try them with that class, and then by the end of the year, because you haven't been using those ideas you forget that you had them in the first place.

M: So in a lot of respects it was, besides getting new knowledge, it made you revisit new knowledge that you already had.

T: Definitely! Most of that stuff was really current when I was in Uni. John Baird and co-operative learning type flavour was all the thing.

Tegan has self-positioned herself strongly in the above exchange as she is making a lot of use of 'I' rather than 'we'. She is comfortable with this experimental persona discussing her teaching.

This conversation continues previous discussion of her work. This conversation prompted a survey of the Year 8 students in Tegan's classes on their project on magnet work (refer to Appendix D-1). Some relevant comments from this survey are shown in Appendix D-2 that indicate students did appreciate her approach to the delivery of the work covered.

M: Were there any particular sections that you think that we should have gone through a little more slowly?

T: Without my notes, Myra... All the sections have sort of merged together so I can't remember. I know the Technology would have been interesting to go further with. But I think it's a pity that we haven't got computers for everybody and we haven't got even computers for every teacher, and it makes it really hard when you know you've got all this technology and stuff you can use in your classroom but you are unable to do it due to lack of resources. So even doing PD on an activity, that's fine, but then you can't use it because you can't back it up with the actual resources.

Her use of first person naming is especially familiar. It is interesting to note here that Tegan makes mention to 'her notes', though perhaps she is referring to the folder of notes supplied by Monash University for the PD. I know that Tegan does in fact take notes.
during sessions since I have observed her doing so. Even in earlier conversations she said she does not feel she can share with others using portfolios, any notes taken are essentially for her own benefit.

M: So if we don’t have the resources then what you’ve actually learnt is wasted?

T: Yes it is. I mean it woke me up and I went straight home and played on my computer and found out a heap of things I didn’t know about it and I achieved some stuff, but that’s all very well. I’ve got the skill now, but it’s frustrating that you can’t actually take it into the classroom and do it. Some of the things you can, like video flics and some of the things I’ve used before. You’re still pretty limited really when you compare to Bendigo and some of those sorts of schools. Why are we missing out?

Funding is seen as a major problem in both PD and in the supply of equipment.

M: Do you think that the fact that there were seven Bangarra staff there are benefit?

T: Yes, definitely. You’ve got people to bounce ideas off. You all went through the same thing. Instead of one person going away and reaping the benefits and trying, fairly unsuccessfully, to deliver it to the rest of the mob, we all went, we all saw and we all evaluated together, and we all came up with different ideas, and we share them. Everybody understands what’s going on, it was really good!!

Tegan anticipates the benefits of a group working together. Whilst Carol spoke sceptically, disillusioned by previous experiences, Tegan had no such biography. Tegan again strongly affirms her need to share with others:

M: So do you feel that the communication between us has improved?

T: I think it’s given us something to talk about and stopped us from being so isolated in the way we teach I suppose. Like I’m pretty keen to come up with ideas and if they work I’m keen to tell somebody else about it, whereas before I just sort of – you teach with a blinkered eye, and you don’t say anything. It gives us something to talk about and to work with.

In the following exchange, I try to find whether Tegan has changed the way she teaches since she first began teaching. I am aware that I am deliberately trying to position her.

M: Since you first began teaching – which time wise wasn’t all that long ago, in what ways do you think change in teaching has occurred? How has your teaching changed?
T: There is definitely a change in my discipline strategies, but in terms of delivery except for the odd reminder like the SET program pretty much it's been the same. I hope that I'm a pretty dynamic teacher yet, I'm not old enough to sort of stagnate too much I don't think. No, I don't think my teaching has changed in terms of classroom delivery all that much. I'm pretty open to lots of ideas and always have been.

M: In the classroom what makes you really excited, really motivated or wanting to do something?

T: What really motivates me more than anything really is the students' attitude. If they're keen then I'm keen. There's nothing worse than trying to fight an uphill battle if you're keen about something, but the kids don't care. So I've sort of learnt to go a little bit with the flow and just try activities and if the kids are keen then you put a bit more time into it than something they're not keen. You've got to learn pretty quickly, no, it's not right, stop that, they're not keen on that so we'll just finish that one a bit quicker and get on with something else a bit quicker.

M: So when you're thinking they don't really like it, you're looking at their body language and...

T: The way they're working. Like there's a difference between making noise and disruptive noise...things that they might say. I tend to be pretty open minded and I appreciate kids telling me how they feel about things and the kids quite happily come up and say they don't like something or they do like something, so generally I'm pretty aware of where we're at. You just sort of feel it yourself, that things are getting pretty boring and tired and no-ones really interested. You know, you get that really good working noise and excited little voices and stuff when they're really interested...even really, really quiet. Sometimes if they're absorbed they're really quiet and you just sort of walk around the room and wonder if they're actually alive still because they're just so quiet!!

In the exchange above, it is obvious that Tegan is positioning herself morally and is justifying her actions in terms of student engagement. She is happy to speak reflexively and is comfortable with sharing this with me.

M: Do you think we can actually report on our PD in a more effective way than just verbally at our staff meetings?

T: To be honest, I've never really heard anyone report verbally on PD at our staff meetings, and yet we're meant to. So obviously it's not effective because nobody's doing that. Why that is I don't really know, it doesn't seem to be coming into the agenda. There doesn't seem to be any pressure on the person who's done the PD to come back and report, which I suppose in one respect is a good thing because I don't know that I'd really want to have the pressure to have to come up with something to say to everybody else, but the other problem is that we're such a diverse area, from agriculture to chemistry to junior science, there's a lot of subjects in between and it's a little bit boring for some I suppose -- for maybe a Physics teacher it'd be boring to listen to a whole heap of stuff about agriculture or ... and from that point of view it's a little bit hard to expect people to
sit and listen to as well as somebody trying to deliver to their peers. So that’s probably something we do need to address. We probably do need to support each other in our various subject areas, a little bit better.

This was an interesting reply, for staff have in fact reported on PD briefly at faculty meetings, but generally it has been so short as to be fairly ineffective. Also Tegan does spend some time in the Ag yard after school and may not have heard some of the reports. I agree that they are not an agenda item and usually seem to slip in if at all. She does go on to say that even though she would feel uncomfortable reporting on an area she didn’t feel would interest everybody. How are people to support one another with different subject areas within the science faculty? She is thinking of herself but recognising the issue applies to each senior area. She has changed from using ‘I’ to ‘we’ which her positions herself strategically with the local moral order with others.

M: Regarding your own development, for yourself, do you think actually recording or writing down whether something’s been useful or not useful...do you think that having a record, a written record of what would be worthwhile?

T: No, not really. If it’s worthwhile, yes, I’ll absorb it. And you have your notes from conferences and whatever. I don’t think I’ve ever been to anything where I didn’t come back with notes. But I haven’t written anywhere – yes, this works... Well, what’s the likelihood you’re going to do it again?

M: Is that how you remember? How you maybe use it in the classroom? How you went off to do the soils thing...

T: To write all that down is just more paperwork. I mean we’re bogged down – I laughed at Mary when she said that everybody thinks that we don’t have too much work to do anymore. I feel completely snowed under and the last thing I want to do is sit there and actually, physically write down an evaluation about a PD. I evaluate my classes all the time but nothing’s written down. But you can see that I’m evaluating by the fact that my courses are changing, things are being crossed out and new things are being put in - ideas that didn’t work this year are gone...there’s nothing written down that say ‘oh, this idea didn’t work and therefore I’ve crossed it out’ – that’s just a waste of time and energy. The same reason we don’t do lesson plans as such. You know, we might have a couple of lines in our diary if we’re lucky. Just too much else to do.

Tegan positions herself in agreement with the other staff interviewed ‘Just too much else to do’ to write up reports sums up her thoughts. She uses the “you” pronoun to mean me
or anyone else in an imagined accountive position. Her position reverts back to using 'I' in the following exchange though:

M: So you're doing a lot of reflection yourself? Without having to write it down?

T: I reckon I spend 80% of my time reflecting on what I teach or what I've done, or where I'm going to go next.

M: So you don’t think that the written aspect of recording PD's is such a valuable experience in itself.

T: No, the only person it's valuable for is PRP — if you want to categorise you as to whether you're a good teacher or not. It's the only usefulness that I can see. I know if something has been useful to me and as far as I can see it's just a waste of time trying to write it all down.

M: I remember you making some comment when you were writing up some work that I'd asked you to do, and you said if I had to do this I wouldn't bother doing PD.

T: Yes, that was probably a bit harsh, because I would want to do PD to keep myself current but yeah, it's just another thing that you have to do, just another bit of paperwork. I assume that we're all a bit in the same boat, but I just find that between running a farm and doing lesson plans and trying to make everything interesting...(pause)....

She sees the portfolio-type of documentation as a form of fixed accountability.

M: What we have to come up with, as a faculty is maybe some way of actually recording or reporting on our PD. Do you think that maybe the verbal thing might be good or just an informal thing to people that are....

T: I wouldn't mind giving a quick, informal rundown on what I did and what I thought I got out of it and where I thought I'd use it but it doesn't take preparation and it probably takes 2–3 minutes in a meeting to discuss. If anyone's got any interest in following it up they can approach you later, they know who's done what — we have a science meeting anyway. As long as it's informal and it's not really bogged down stuff.

Tegan's commitment and concern about professional identity formation led her to seek conversations with others including myself in a way that others avoided positioning themselves as autonomous and individually accountable in various ways. In this sense collegiality is a way that the management positions the members of a department as responsible to and for each other in making institutional decisions.
The comments in this interview on ‘change’ prompted further investigation with a survey of the Year 8 classes concerned. The survey given to the Year 8 class can be found in Appendix D-1, and some typical student comments are recorded in Appendix D-2.

**Tegan’s Third Conversation**

Like Debbie Tegan repositions herself as a coordinator. She is more confident of her standing in the department and is able to position others to gain their assistance. On being asked about whether her need to network was still important to her, she replied strongly:

T: Actually, it’s much more important now—not only in science, but in the Co-ordination side of it that I’m doing now too. I think I’ve done a lot more of it this year than I have in the past.

M: And you are still ‘trading secrets’?

T: I think it’s worked using your peers that have been around for a while. You know, we’ve all got our own specialities, and I’m not a specialist in physics or chemistry by any means, and so it’s good to be able to grab someone from there who is able to help.

I’m not sure that Tegan actually understood what I had meant by ‘trading secrets’ and yet it had been her terminology from an earlier conversation. Tegan was finding pleasure in student learning in her classes ‘in making students think’. In her classroom management she has also positioned herself as ‘challenging’ her classes in taking psychological initiatives. She presents herself as inventing strategic moves dealing with experiences in storylines in which she claims responsibility for the responses and the self-positioning of students.

T: I want to give students a challenge. It also challenges me.

M: And how do you do that now?

T: I try and not fall into the practical, or report or practical-assignment-test mode, I try and keep it moving around; make models, make videos, try and do a heap of different
assessment tasks, trying to challenge different kids. Because some kids don't do that well in the tests and some will work better with a model or something like that.

M: What's been a good class recently that you can remember?

T: We did a worm video. The kids had done classification already, and that was part of the Ag course, and they'd apparently done a fair bit of it in year 7; so I did a quick change of tack and I used the classification and ecology stuff to look specifically at worms and worm farming and we did a video on how to make a worm farm and how to look after them and what requirements they need and things like that. The kids absolutely loved it. Even yesterday, we were trying to do bubbleology and they wanted to look at their video!

M: Oh, that's good! So that confirms that you're still willing to try new ideas and do you do PD to get new ideas or is it still mainly the networking aspect?

T: No, it's definitely to get new ideas. I was keen to go to STAV this year. That's my first STAV and it was very good. Very interesting. The amount of things that you can do with kids that were more advanced than when I was at school - I mean I tend to rely a lot of what I've seen at school and what I've seen at Uni because that's what you've had access to and then...then start going out to things like STAV you pick out lots of new things that you haven't seen before, and you see a lot of advances in science and you can try and bring them back to the classroom.

Tegan's positioning in this conversation is to document her persona as science teacher whereas in earlier conversations she was more concerned about her persona as the VCE agriculture teacher, a role that she could only explore with teachers in other schools.

M: So that really got you going?

T: Yeah, well I've already used the bubbleology stuff, and ...

M: What did you do in the bubbleology?

T: Well you just make up a mixture for your bubbles. They've got to be quite firm bubbles so they don't pop as easily, and then you get a straw and you dip it in the solution and you put it on the table and blow in the straw and a bubble sort of forms on the table itself and then you look at trying to make bigger bubbles. It's like problem solving I suppose, because you're trying to stop it from popping, so the students have got to work out how to do that. And you do that by putting detergent on the table, because as soon as it hits a dry bit it'll break. Trying to get bubbles within bubbles within bubbles - the kids really enjoyed that! And driving a matchbox car through the bubble without popping it!!!

M: How do you do that?

T: You dip the car in detergent and you flick it pretty quickly.

M: So did you explain to the kids about surface tension and all that or ...
T: It could be a good introduction or a good middle part of that. But I just used it as a holiday activity this time to trial it and it worked quite successfully, so I'll be happy to use it if I see it fit. At STAVCON we also did some stuff with DNA where we constructed DNA from peas. I've never seen that done before, it's so easy; you can easily do that in a classroom! It's so awesome that you can actually pull DNA out of things!

M: What would you do with it then? Well, could you do anything with it?

T: I've still got it in a test tube at home. (Laughs) I don't know where I'd use that actually, unless I did it with the agriculture kids, because it's probably a bit of an advanced state for science.

Tegan found professional recognition by colleagues and significant others in sponsored attendance at STAVCON, the major annual professional science teachers' conference and was obviously excited about attending it for the first time. The sessions she found most useful were those she anticipated would be exciting to stage and stimulate her students. She sufficiently strongly self-positions to not respond defensively when I challenged her on the content side of the 'entertaining' activities. Tegan is less certain about positioning herself within the moral order of the CSF:

T: Is anything I say going to be held against me? I haven't really done anything about the CSFII. I haven't read it. But I've been involved with setting up the courses for science with the others, and then we've looked at CSFII and set them up to that, so from that perspective I sort of know...I've left it this year because it didn't really fit into the way our course was structured; it wasn't that obvious where CSF sort of fitted. Now it'll be better.

Here I think Tegan is referring to the work we did as a faculty on course development and her awareness of the need for at least nominal compliance with the CSF. Unlike others in the department Tegan has committed herself to keeping a reflection journal. She has sustained this for a number of years.

M: Do you still do ongoing evaluation of the courses? Because you made some comment about how you always evaluate and you're always reflecting. (T: Yes) Do you still do that?

T: Definitely. I'm always re-writing courses and deciding if it didn't work very well, working out a better way of doing it.
M: I remember you used to write a lot when you were sitting next to me; you were writing plans and....

T: Nothing's changed. I'm forever writing courses.

M: So you find it beneficial?

T: I find it's a pain in the neck, but I've only been teaching for 6 years and I can see a huge improvement in the standard of information that I'm delivering and the way I'm delivering it compared to my first year. I mean it's only going to improve, when you reflect that way.

Tegan here evaluates the improvements in her presentation of ideas. In an earlier conversation she positioned herself as weaker in the discipline aspects of her teaching rather than delivery. It is interesting that I call her writing 'plans' and she calls them 'courses'. It seems that she continually reviews what she has taught to improve her explanation and delivery.

In relation to the new accountability to her teaching skills with information technology she indicated she felt a little deficient in skills (like the other staff involved in this research) yet she is learning new skills to improve in that area.

T: Well, yeah we have - or I've done a fair few more modules with Certificate II to help with learning technologies.

M: And you feel more confident with that now?

T: I feel better. I've got my own (school provided) laptop now, so that's helped as well. I think I was a bit stroppy last time when I didn't have one. But how that can be used in the classroom... still there's a long way to go. There's no network point in classrooms yet. Well if there is on the senior site, there's not on the junior site. Hopefully there will be in the new building. And I need to see more things like what Mike did the other day when he demonstrated the probes. And there's lots of other things you can do with your laptop in the classroom, only to see it in action. It's quite difficult to imagine using one laptop with 25-26 or 27 kids in the classroom.

M: We are actually getting some, half a dozen computers over on the junior site and half a dozen on the senior site for science.

T: That would be good. There's a lot of setting up to get those computers actually running. And how they're used... And what software we have available to be used on them...
Finally Tegan was asked about her need to share ideas with others:

T: I like to (share ideas). I found myself being a bit of a mentor this year to a few people, well one person at least anyway so that was nice to be able to say 'well this worked for me', and then swap things. Getting some of their ideas as well. We all think differently... And we all have different experiences even though there's 1001 ways of teaching the same thing. So there's only one way to find out isn't there - to share and trial and then reflect and then decide if you liked it or not.

Tegan here is summing up a number of thoughts and opinions that she know I feel strongly about when she is saying that ideas must be shared and trialled, and reflected on and then one must decide for oneself if that is going to be useful for your situation or not.
CHAPTER NINE

Conclusion

Who Makes the Rules?
Chapter 9

Conclusion: Who makes the rules?

What type of study is this?

This ontological study takes seriously the influence of everyday conversations in school staffrooms in making the concept and pretence of professional development meaningful. Everyday conversation in the staffroom is the basic social entity in personal professional identity formation, institutional maintenance and transformation. The study distances itself from attempts to identify a ‘set of rules and resources’ that define the social structure and ‘role’ of science teachers. Here I am concerned with another type of identity, personal identity — what it is to be one and the same individual through a life course. Life-space research cannot simply take for granted the widespread idea that we live one ‘biography’. The teachers here adopt different personae in relation to different personal choices. A dialogical approach to the study of selves and biographies has been developed after Harre and Langenhove (1999). The study of the acts and actions of the four science teachers involved in this study demonstrate the force of drawing, on the one hand, on pronominal analyses of the person in everyday discourse and discursive practices, and on the other hand, on cultural and social analyses and the local moral order to locate the persons and their agency as science teachers.

The question, “Who makes the rules?” that science teachers follow tacitly in judging their discursive acts and actions and those of their colleagues as appropriate or inappropriate, is implicit in the title question of the thesis, “Is Professional Development a solo or collegial activity?” This is not a simple question. Why should it be? The two themes of complexity
within society and individual choice run through each of the preceding case studies. Neither social theorists nor educational managers seem to realise that committed teachers have many roles/sense making methods to choose from in their everyday lives, which makes considerations of the communities like the science department, which shape choices, important. However, it is also clear in the preceding discourse analyses that these teachers don’t simply obey Garfunkel’s (1967) community view of rule-following considerations. Neither do they comply with Giddens’ (1984) mechanistic picture of society, which appears not to afford choice and variety.

In the period of cultural change explored in this longitudinal study, teachers’ professional development was often conceptualised by the science teachers involved in this study as a process that was long-term and non-linear. All of the science teachers interviewed have at some stage commented that they always reflect. Reflection, which I characterise in dialogue with them, is a part and parcel of teaching as both a public and private activity. Clement and Vandenberghe (2000, p.89) observed, “The way in which team members work alone in schools is strongly associated with the way they collaborate.” This study suggests that how they collaborate is strongly associated with how they converse. It is in their everyday conversations that social grammar emerges, and professional biographies are reconstructed.

Autonomy and collegiality have been explored in sharing professional development experiences in such a way that they allowed teachers to more openly express their teaching principles and practices. Colleagues offered each other learning opportunities with few conscious strings attached but often with many unconscious strings attached. A teacher can only be the teacher that their colleagues can accept. They give each other freedom to decide what to do with the opportunities they jointly construct.
In this study we see some teachers most of the time, and most teachers some of the time, create opportunities for their own professional development within their daily work. These teachers refine their teaching practice in their discursive positioning with their pupils and colleagues. In their conversations with me they refer to social episodes in which they show how they repositioned themselves to deal with conflicts with and among pupils, how they keep lessons interesting enough and how they retain control and exercise authority over a class. Professional identity formation thus occurs at the intersection of their intention and social necessity – here, after Giddens (1984) the social order, comprising rules and resources, is reproduced or transformed.

**A transformational model of social action**

The data analysed here does not reveal an image of professional development as a continuous process, rather it was generally episodic and made continuous in the retelling of the episodes as part of a continuous biography in which each teacher presented multiple personae consistently embodied in a self that others recognised and responded to. The teachers’ accounts show that while professional development was dependent on their personal engagement it could not simply be dismissed as an individual affair. The ontological significance teachers attach to their discursive interactions with teaching and administrative colleagues, the challenges that result from the interaction with individual pupils or a cohort of students, all demonstrate that professional development is a lived experience that has clear significance in the maintenance and transformation of the school community. The dual praxis of professional development can be represented in the schematic model below (Figure 3). The model refers to two movements of individual existence linking biographic self in conjoint dialogue between cultural appropriation and self-cultivation.
This dialectic distinction is formed in this research in terms of the person being both a social product and a production of Bhaskar’s (1993) dual praxis of self, ‘self-as-product’ and ‘self-as-process’.

Figure 3: Transformational model of Faculty Development: Mutual self-cultivation and cultural production in the Science Department.

The model underscores the fact that it is virtually impossible to discuss teacher agency without involving the idea of biography embedded in self-production. From a social behaviour perspective the self-as-product is a complex social position that emerges from a lifetime of practical interaction with others and with nature. In human agency, “me” (after Mead 1934/1962) is the publicly formed aspect of the self that emerges in the teacher’s adjusitive interactions with the physical environment, colleagues and students and the school is located as the “generalised other”. Consequently, the self-as-process “I” (after Mead) forms the core of human agency and its spontaneous powers. The ‘me’ is the way I am seen by others and have to be in this school to work here. The self-as-process sets strategic goals of action and shifts them as the situation demands.
Self-as-process “T” reflexively monitors its own life situation and is capable of judging firstly, the options offered; secondly, the emotions to be cultivated and thirdly, the steps to be implemented when striving for long-term goals. When the occasion demands the “T” can alter its conduct and feign behaviour in order to appear consistent with past commitments to colleagues and projected identities.

The “T” can be seen as an anarchic predisposition to act, (Bhaskar, 1993) as the last refuge of freedom from domination. “The transformative capacity of the agent depends upon competencies and facilities (access to resources) while the acts performed in and by her actions will depend upon the extent and manner in which she is able to mobilise these resources (including ‘inner’ ones – curiosity, hope, imagination, drive, bodily gesture, self-esteem) and the circumstances of her action” (Bhaskar, 1994, p. 99-100).

The “self-as-process” interacts with the world, transforming it and in turn having its own path to future self-realisation irreversibly set by a running string of reproductive success and failures. This is how the self builds a career history and a social identity over time. The professional development instinct is not so much grounded in a constellation of stable personality traits, as it is in an open-ended assemblage of time-dependent feedback loops capable of being monitored or being redefined and redirected. Professional development is the capacity to carry out a complex series of future-oriented, stochastically ordered steps in a predetermined sequence in order to achieve some as yet unrealised goal in one’s practice.

While we often speak of ourself or others’ “new beginning” or of “re-inventing themselves” in a new situation or experience or even of “history repeating itself”, the cumulative, irreversible nature of biographically constrained self-production denies the possibility of such
reconstructions. The disproportional self-as-process aspect of 'Professional Development' is sunk in the teacher's own biographical past and historical moment. Teacher agency however, for all its freedom must unfold its power in an irreversible rhythmic context of material constraint and social reputation. In this way the teacher or agent, through continuous acts of cooperation and self-cultivation cumulatively constructs a reputation and social expectation within the school. Using the dual praxis model, agency is a process that cannot be understood as something isolated from the structure in which it operates. Structure and agency operate together. In fact they are two sides of the same coin.

All teachers interviewed were unanimous on one point in their perception of professional development. Students play an important role in the aims of the individual’s professional development. Clement and Vandenberghhe (2000, p.95) confirmed the “well-known research finding that teachers place the relationship with their pupils at the very core of their profession.”

Every one of the interviewees in this study also spoke of the importance of making professional development relevant to their classroom teaching and their students. This was the number one index in judging professional development activities in the whole school survey conducted at the start of the study.

Teachers wanted to get to know and understand their students, so that they could build up a pedagogical relation (Van Manen, 1994) in which each student feels at ease in taking the intellectual risk to join a conversation with them. At Bangarra, the safe and secure environment is one of the school's charter objectives. Control, accountability, and flexibility were the core themes of teachers' professional development. Most teachers are aware of the fact that they have to develop new capacities to meet changing student needs and interests as Clement and
Vandenberghhe (2000, p.95) observed, “They do not want to rust in their old habits.” However, there are some teachers who deny any need for change in response to ‘external’ social movements. They do not reject demands that they fit in with others, but structural changes are not of particular importance to them. This is more characteristic of teachers in their mid to late-career phase where their relationships with ‘their’ pupils are of more important to them.

This longitudinal study revealed that as teachers talked more about their individual agency as one expression of communal power, they became more motivated to collaborate. Teachers were initially less committed to collaborative enterprise because they understood the culture of privacy and the prospect of mistrust and misunderstanding in joint activities where collaboration was not the norm.

Longing for a completely collegial school is as unrealistic as it is undesirable. Hargreaves (1994, p.67) observed, “The solitary mode has its place.” Most teachers plan and teach certain things better on their own, and some may feel they function better when working completely autonomously. Clearly workplace conditions should be modified in such a way that collaboration affords challenging for professional development without teachers having to abandon their autonomy. Teachers should be heard in staffroom conversation, talking about teaching in the first person ‘I’ and ‘me’. Where consensus is forced and the authority of the teachers’ experience is not recognised in the local moral order then the second person ‘you’ and ‘we’ will predominate.

This study describes a conscious move to promote conversation in the direction of self-as-process in one staffroom and marked the change in cultural agency in their workplace conversations using positioning theory and their changing pronouns. Personal voices not only need to be heard, but also engaged, reconciled, and agreed with. It is important to attend not only
to the aesthetics of articulating teacher voices about their own professional development, but also to "the ethics of what these voices articulate" (Hargreaves, 1994, p.62). Teachers ethics identified here concern their own and others' capacities to improve their effectiveness as teachers both through the use of new electronic tools and new knowledge but also through responsiveness to pupil needs and interests. These capacities they see as restrictive or enhanced by social structures –comprising rules and resources.

Fostering mutual trust is important, yet trust in people is impossible without trust in processes and expertise. I, like Clement and Vandenberghe (2000, p.98) believe a school must "professionally try to become an organisation characterised by collective expertise, striving to improve its problem solving capacities." This organisational capacity is emergent in good communication, collective decision-making, learning opportunities and learning space, and actor ‘networks’. These rather than mandated structures –rules and resources- are essential to understanding and moving schools to improve, and for teachers to develop professionally to resolve the ethical challenges they face.

**Institutional meanings**

Science staff have presented in conversations concerns that are similar to other faculty areas in dealing with the way students enter into or reject their teaching and the desire to come away from a PD activity with something they can use in the classroom. How they differ from other KLA areas is in the type of activity. Most science staff wanted activities that will directly enthuse and excite interest in the students. The science staff involved in this project felt that collegiality and working together was important principally in program reform that they had to share and in improving their skills in particular areas.
Being a large rural school has its problems when dealing with PD. Much of what could be considered valuable PD activities is offered in the capital city, and to justifying travelling for eight hours for a two hour session is difficult. As well as the travelling time there are the issues of leaving classes. PD activities can be found going on throughout the year, but when only two days release and $220 is available per staff member for PD, the staff members often selects the big conferences at the end of the year, when the teaching program has been completed. The Science staff declared a commitment to managing their own PD, rather than have it thrust upon them. Hargreaves (1995, p12) suggests that, “Teachets who otherwise might be inclined to change in and of themselves ironically become resistant to change when it is imposed insensitively and seemingly incoherently.”

The staff felt local PD organised by the school could be improved through community discussion. A serious interest in the hopes and purposes of groups of staff is central to the development of organisational capacity. Although not everybody is going to be pleased with any PD organised for the whole school staff often distanced themselves from the educational purpose and presentation of such events. The provision of non-teaching days to write courses was better accepted, but again, not all staff were fully involved or engaged.

The genesis of this study was in the breakdown in feedback and/or backup support after PD. Rarely, if ever, is there provision for discussion of the significance of the PD activity in terms of professional gender clarity and purposes. In the framing of this research, portfolios were seen by many to be an effective expressive device for recording and reporting on personal and professional development.

As this longitudinal study developed the written mode of the portfolio seemed to trap it in
science teacher conversations in the literary narrative mode of the autobiography; beginning, middle and heroic self-promoting end and the teachers involved in this project felt that something ‘simpler’ and ‘less time-consuming’ needed to be conceived. The staff also said they needed to respond to any recording or reporting soon after an event, or the significance and force of the contents of an impressive presentation could fade in the representation. The teachers who reported to their colleagues in portfolio mode found that although it was very valuable it was again a very time-consuming experience. The discussion with the science staff collaborating in this research made it clear that the portfolio was not the preferred method of researching and sharing PD.

The staff involved in the writing of PD reports as discussed by the faculty and school felt more ownership of that technique, rather than being told they had to report using a portfolio technique. Even though what they are doing is a type of portfolio, since they devised the types of questions to be answered in the report, they seemed to feel more comfortable with it. The reporting of PD was seen to be beneficial, but it needed to be both verbal and written. If it were to be merely verbal, then much of the information would be forgotten and lost; if it was just written, then any enthusiasm could not be shared.

The science faculty has sustained the reporting aspect of PD as devised by them, and it is likely that further individual reflection on what they have done will occur. The staff have not sustained this type of reporting before, and so any change in current behaviour, even though seen to be worthwhile is probably going to be slow. The author’s research agenda itself functioned as a stimulus. With the conclusion of the research and the departure of the author to another school the future of written reports is not clear. If the staff are not encouraged to see a value in it for them, then they will not do it well –the effort will not be there to make it worthwhile and it will
be dropped. However, all staff show in the conversations that the discursive order had changed in the course of the research in other ways.

A skill-based PD activity for a group of science teachers from the same school was a positive stimulus in encouraging mutual support. It was felt that greater communication was achieved, since staff began discussing ideas and positions. The sharing of resources and work improved and the camaraderie and well being of the faculty as a group was noted to improve. Whether this type of experience would have been afforded by a sharp one-off group session rather than an extended evening program is doubtful. Typically there has been little time to discuss and confer with colleagues. From general observation, staff working together on an activity or some project generally ensures that some change occurs in the acts/actions of people. This is predictable from the model presented in Figure 3, which emphasises the mediation of the communal powers in sustaining teachers’ transformational agency.

Since travel time is such a vital cost in the country, PD activities that can be accessed locally are a huge advantage. Participation in a large conference in the big cities is seen as important as well, but many of the activities offered in the metropolitan region are not even considered by country teachers due to the time constraints of travel and the difficulty of having colleagues cover one’s classes.

Country teachers will often be forced to fall back in conversation on their own practical experiences to construct some meaning for what they do. Contexts clearly matter for teachers’ work and how that work is experienced. As Hargreaves (1995, p.15) stated, “One’s teaching, what one knows about teaching and what one believes is possible and desirable in one’s teaching all vary according to the context in which the teaching is done”. Teachers are more likely to be
supportive when there are strong cultures of collaboration sustained in conversation in which they work together for the students they share in common, and where the school gives access to professional development. To respond to educational change depends on the context in which teachers experience it and discuss it.

The final group conversation (Appendix E) indicates the science staff at Bangarra are able to positively positioning themselves as a group in improving their personal skills and knowledge in the use of technological resources area. The use of computer programs to enhance teaching and student learning, and use of up-to-date equipment such as probes, cameras (digital, video and Flexi-Cam, and microscope) was seen as necessary to maintain and improve student learning.

In conversation some staff experienced a particular need to keep abreast of current developments in their preferred area of training, such as Debbie and Carol’s enthusiasm for the Walter and Eliza Hall Institute on biogenetics. These two shared a strong professional identity as biology teachers. They found it useful to have an ‘expert’ or experienced person on the staff they can refer to. Others said they sought this from VCE teachers in other schools when it was not possible at Bangarra to do so.

The individual teacher has a dual identity and praxis. Firstly they see themselves as socially positioned by a society to produce the VCE and CSF and this necessitates compliance with often rigid expectations of the system, students and department. Secondly they see themselves as having their own purposes, capacities and ambitions. Self-improvement as well as competence is expected. Questions often asked include ‘How can I improve/Change the way I teach/learn?’

Full membership of the science department requires and affords the discursive integration of history and biography in its aspiring members. The historically accessible cultural forms of
science education in the ideological and material resources of science teaching –must be integrated with biographical storylines that demonstrate internalised social rules in a personal identity formed at the intersection of personal intentions and social necessities. The science teachers’ interest in and preference for PD that is ‘useful’ requires explanation. In the expression of communal power, the social motivation around material things is particularly strong. The power attributed to Information Technology grew as the study proceeded. There were many instances of such affirmation attributed to other material objects –particularly demonstrations and practical activities such as gene technologies.

**Conclusion**

Within the framework of this study material things enter the social order of science teaching in two ways that affect the double social order that has been demonstrated in the case studies. One component consists of the social arrangements of maintaining life and order in the classroom environment. This is the practical order and we all have our locally proper places in such an order. The other component consists of the social arrangements for creating hierarchies of honour and status. This is an expressive code associated with being able to demonstrate knowledge and wisdom production, signing and power. In the cases examined here the priority for PD is with the material bit first with the experience over the practical. The meaning appears first in the social function and then and only then is it internalised.

The point that is illustrated in consideration of professional development is that there is nothing else to social life but symbolic exchanges, of the joint construction and management of meaning, in the science department including the meaning of bits of ‘stuff’. To become relevant to teachers lives in a science department, material things offered in PD activities must be interpreted for
them to play a part in human narrative. Interpretations require grammars that are historically and culturally local. As the teachers proclaim again and again in their conversations the 'data-logger' or the 'POE' strategy became social objects only within the dynamic frames of staffroom and classroom storylines.

The thesis has argued that professional development is closer to personhood than has been generally acknowledge in the literature. Effective PD must show two distinct 'centrings'. A person has a sense of individuality that emerges from the fact of human involvement. The teachers here are persons embodied through the determination of the person's interpretation of science, which are a necessary condition of their personhood. On the other hand, I've argued that the person of 'science teacher' has a sense of individuality that emerges from the way that responsibility for actions is assigned and assumed according to the moral order of the local society at Bangarra, in particular the community of the staffroom, as I have tried to show in the model (Figure 3). The individual agency of each teacher is the self-cultivated expression of communal powers that can change the local order.

 Whilst I have since left the school after nine years, the conversation goes on. Professional development is both a solitary and collegial experience but is above all a personal journey. The study suggests that only schools where learning opportunities and learning space are located in a way that affords community life, without denying teachers' individuality through the reconciliation of autonomy and collegiality, can guarantee teachers much needed professional development. Within such a context science teachers in this staffroom are more likely to engage as professionals who seek to become more aesthetically and technically apt, and who are also conscious of the moral and political implications of the work to which they are committed.
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APPENDICES
APPENDIX A: OVERVIEW OF THE RESEARCH STUDY

The Timeline

The following guide represents an outline to the placement of interviews relative to when certain PD experiences were held that are described in the interviews.

1999:

- Two staff attending a week-long PD at the Eliza Hall Institute for Gene Research
- Some staff attending Certificate II courses in Information Technology — partly as a requirement for use of lap-tops by the Department of Education, who stipulated that PD into computer technology had to occur as part of the leasing contract, and partly to learn how to use new programs effectively. This certificate course lasts for two years.
- Commencement of research into communication through portfolios.
- Whole school PD on Multiple Intelligences ‘Frogs into Legends’.
- Research in Schools survey.
- Science staff initial survey.
- VCE in-services: Conferences in subject-specific areas such as Chemistry, Physics.
- Initial interviews taken.
- SET extended professional development program, which was run in the school, facilitated by a senior member of staff and attended by a majority of the science staff in the Faculty. All persons in the focus group of the study attended this activity. Trial use of portfolios.
- Second interview following up on the PD just completed.
- CSF course-writing day.
- STAVCON 1999 where trial use of portfolios was reported.
- Reporting of sessions to the faculty.

2000:

- Staff attending subject-specific conferences.
- Whole staff PD on School Values and Goals (Warwick Cavell).
- Staff member demonstrate the newly purchased TAIN probes to the science staff.
- Third interview conducted.
- STAVCON 2000 at LaTrobe University.
- Reporting of STAVCON sessions to the faculty. Some demonstrations given by attendees.
- Further course writing: up-dating CSF courses.
- Final Group Interview conducted.
- On-going course development.
2001:

- Further discussions with staff regarding their PD progress.
- Whole school PD on Managing Diversity in the Classroom, by looking at Teaching and Learning Styles.
- Further individual PD relating to individual PD plans.
- Most science staff attend a two-day PD program in Ballarat.
- Junior site Science rooms are renovated and re-furbished.
- New courses developed for the school’s new inclusive Year 10 structure.
- New equipment bought for the Science faculty including new IT equipment.
- On-going course development.

2002:

- Science faculty at Bangarra is involved in Science in Schools (SIS) Research to exemplify science teaching.
- Further PD and course-improvement days relating to the SIS strategy.
- Whole School PD on Teacher Performance and Development.
- On-going course development days.
- Two new highly organised laboratory assistants at the school.
- Further individual PD relating to individual PD plans.
- Highly successful Family Science Night involving all science staff.

The Problem of Faculty Communication and Reporting of PD

Because the thrust of the contracted research was an investigation of effective means of reporting of PD, the author was able to insist that the faculty needed to talk about this issue at more than a cursory level. After some discussion as to the ease of reporting of PD after the SET program was finished; the science staff sat down together and discussed other ways of reporting and recording their PD. Staff were still willing to report their PD, but they wanted simpler ways of doing it if that was possible. They also felt that the reporting or recording had to be done very soon after the event.
The following comment puts forward a view on the value of written reporting:

"It's very hard to inject enthusiasm onto a piece of paper. Different people need PD for different reasons. And what they’re looking at in a day’s activities or whatever might be different to what I’m actually looking for."

A number of suggestions were put forward. But it was agreed to trial the following using STAVCON as the specific Professional Development activity:

- A verbal report at a faculty meeting. The type of PD that was being reported would specify the length of report.
- Discussion with interested parties. There may be other staff who may benefit from the PD who are not in the faculty, and there may be some staff who would need more information of a more complete or in-depth nature
- A brief written report of the activity posted on the science PD noticeboard. This would allow others to browse and read the information in their own time
- A personal journal or portfolio. This was seen as important for the PRP process.

The format of the written report for the ‘portfolio’ was decided as follows:

- Collect the information about the activity. This would include the blurb about the activity as well as any other documentation given prior to the activity.
- Record the expected outcomes. What did you expect to gain from this activity? What did you think it would be about?
- What did you get out of it?
- What were the good bits? The memorable bits?
- How will you use what you have learned? For classroom teaching? Course Development? Other?
- Include any handouts, resources, Internet sites, and so on
- Recommendation for other staff

The reason to record what one expected from and what one actually got out of an activity is that there are many instances where one may go to a session thinking that it will cover a particular
thing, and yet the reality is quite different. To record how one expected to use the information is the beginning of the reflective process. If an activity worked well or not in the class, then comments explaining what and why it went well or not should also be included. This evaluation step is the final stage of the reflective process and should enhance any portfolio.

Three of the staff who went to STAVCON have attempted to report in the manner described, but did not include the final reflective stage, and the following comment indicates an opinion:

"I think that it is a good idea to do the reporting, but gee... it is time-consuming and really badly timed!! I have felt pressured with writing reports and such and yet if I left it too long, then my thoughts would not be fresh and the report wouldn't be as accurate. Some of the bad points would get smoothed out. I really felt pressured..."

The general view of the management of 'good information' sharing from PD was that any reporting needed to be done soon after the event, and that as with any PD, an allocation of time perhaps needed to be given for a plenary session so that effective evaluation and reflection can occur.

It should be noted that in relation to the interview section following, this method of reporting was trialled between the second and third interview (after staff had attended STAVCON) and that further comments relating to this can be found in the third interviews. It was interesting to note that as a whole staff, the needs are fairly similar to those within the science faculty. The science faculty made a point of wanting lots of hands-on activities and use of up-to-date technology, and being competent with using technology, but others also wanted activities that they could use in the classroom. Motivating and keeping kids (particularly boys) interested was felt to be a real challenge. Girls were not identified as a problem with the science teaching at this school.
Science staff indicated that there was a need for further development of courses and that communication within the faculty, although reasonably good, could be improved. When other staff members go away on an in-service, there is little feedback as to what it was even on, let alone whether it was useful or how it may benefit others. There was no way of justifying why one went on a PD activity. The PD plans that staff were expected to submit for their annual PRP (Professional Recognition Program) review were often written only prior to the actual review, after that staff member had participated in some PD. The school, and particularly the PD coordinator, would like some sort of account of the PD individuals go on, as the school funds most if not all individual PD.

It was recognised that some of the problems encountered by the faculty may be local ones. Science rooms are located on two sites, and we do not have two full-time lab assistants to assist with the preparation of practicals and so on, and much of our equipment and facilities are antiquated and in need of replacement.

The original proposal that portfolios be used to assist in the reporting and recording of PD was seen as a valuable reflective exercise by some, but the consensus was that it was an imposition on their already stretched time. Perhaps there was some reticence towards the use of portfolios because the staff did not develop this method of reporting and the ownership was not there, or perhaps the mandated PRP reporting on PD trivialised reports or they felt that what was expected of them voluntarily was too much. Faculty members commented that reporting on PD was too formal for the priority accorded it in the social structure of the school. The issue of improving communication in the Faculty was however being seriously addressed.
Staff felt the portfolio method was time-consuming, yet any reporting needed to be done soon after the event otherwise important aspects of the activity would be lost forever. A verbal report at a faculty meeting was found to be beneficial, and seemed better at relating the enthusiasm of a particular activity. The verbal report allowed questions to be answered which a written report could not.

In 1999, participation in the SET extended research program promoted communication amongst the staff involved as it got them discussing what they had collectively learned and how they could use it in their classroom. There were other staff members who have just completed a Certificate II in Information Technology from TAFE that gave them some very useful skills in the use of computer software, but there were still requests from staff to get up-to-date with other technology such as probes. An urgent need for Information Technology equipment in the faculty surfaced in Department meetings where staff members expressed their frustration at not being able to implement procedures they learnt at PD training.

**Initial Conversations**

The initial conversations with members of the Science faculty took place soon after the Research in Schools project for the Department of Education's Science Engineering and Technology (SET) program. SET was an initiative of the State government of Victoria with a focus on improving the standing of science in the local school community and the general community at large. These initial conversations occurred in August 1999, after initially giving a whole school survey on PD (Appendix B-1), and a Science faculty mini-questionnaire (Appendix C-1).
Follow Up Conversations:

There was opportunity that I was keen to grasp for all science staff at Bangarra to participate in an extended local PD program over seven weeks titled S.E.T. Extended Professional Development. At Bangarra it was decided to take up the offer with as many willing participants as possible, as the PD was going to occur in our own school, and no travel time would be lost. Although it was after school for six weeks, for three and a half hours (including meal break), many felt it could offer something to us as a faculty and as individuals.

The activities were organised by Monash University, with local facilitators and presenters. There were twenty-three participants locally and the facilitator of the secondary component was our Science Coordinator at the time. Following on from this PD, further conversational interviews were conducted with participating staff to explore the value of that type of PD activity, and to test methods of reporting of PD, in particular the use of staff reporting for faculty development (refer to Appendix C-2).

It must be noted that I, as the researcher, also took part in the extended PD activities, and as a result felt I knew what had been afforded.

Third Set of Conversations:

Just over twelve months after the initial conversations, the four staff involved in this research were interviewed again to determine how the PD they had taken in the previous year had impacted on their teaching. The interviews were conducted after the annual STAVCON and were
also held after a day the local science staff had off classes to work on course development in CSFII and to make the courses more interesting and more coherent. Each interviewee had been given a transcript of their previous interviews to peruse prior to this interview, as it had been some time since they had last been interviewed.

**The Final Group Conversation:**

This group conversation took place after the third set of conversations, and actually occurred on the second last day of the school year, as there was no other time available for all five of us to get together. It had been difficult to get all members of the group together as we all had different needs and responsibilities that needed attending to at the end of the year. The purpose of the group conversation was to get an overall feel of how this research had gone. Details of this group conversation can be found in Appendix E.
APPENDIX B: THE WHOLE STAFF SURVEY

B-1: Introduction to the whole staff survey

An initial whole staff survey was distributed at a staff meeting one night prior to the end of Term 1 1999, for them to complete in their own time. A copy of the survey given can be found in Appendix B-2. Most staff seemed to have predominantly the same types of wants and needs, and indicated they wanted PD that would help in their classroom; give them hands-on activities and strategies to use. Refer to Appendix B-3 for more detailed PD participation results and graphs. It seems clear from the graphs that having a limited number of PD days available for Professional Development is one contributing factor why staff may not participate in extra PD.

Appendix B-4 shows the main reasons given for undertaking professional development. The vast majority of staff placed a high priority on undertaking PD for professional gain, but a low priority for implementing initiatives. Hargreaves (1995, p.13) observed that, “Research on secondary school teachers indicates that they are often interested in their subject matter and its successful transmission as much and sometimes more than they are interested in the good of their students.” Certainly many staff wanted subject-specific in-servicing, but the ‘good of their students’ will of course be inextricably linked to their learning of basic skills and literacy in technology as well as access to TAFE in undertaking local courses.

Travel and the associated time involved, was one of the main barriers mentioned as a reason for not participating in some PD activities. It was interesting to note that few staff actually reported at faculty meetings, and very few kept a record what they have done or how they have actually used what they have learned. ‘Good PD’ was noted as thought provoking, gave useable and realistic ideas for use in the classroom and feedback and debriefing also occurred. Additional comments can be found in Appendix B-5.
B-2: General Staff Survey - Professional Development

The purpose of this survey is to gauge what types of professional development staff at Horsham College consider the most useful, and how they use the PD they have participated in. Some of these questions will require you to prioritise your response. Some questions may require you to circle a response. Other questions may need a longer response. This survey is part of research for the Department of Education’s “SET for success” strategy conducted by Myrna Allan.

1. What is your gender? Male Female

2. How many years have you been teaching? ____________________________

3. How regularly do you participate in individual PD? (Individual PD means other than those days organised by the school.) Circle your response.

   Often (more than twice a year) Sometimes Only if I have to Never

4. Would you participate in more PD if you could? Circle your response.

   Agree Disagree Don’t Know

5. What are the reasons why participating in more PD may not be likely? Circle your response.

   School only allows certain no. of days Financial Cost Nothing interesting to do

   Travel involved Other (Explain briefly)

6. People undertake professional development for many reasons. Please prioritise in the following in order:

   1 most important to 6 least important to you

   Personal Gain Implementation of initiatives

   Gaining new experiences Practise/Skill improvement

   Professional Gain Information

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7. Which type of PD do you find the most effective for you? This can include School organised workshops. Please prioritise each type of Professional Development listed with the various reasons for doing PD activities. Use the following to show priorities:

1. Most Effective
2. Very Effective
3. Effective
4. Not very effective
5. A waste of time

Note: If you have never taken part in an activity mentioned place a Z in the appropriate section

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<tr>
<th>Updating Academic/Professional Knowledge</th>
<th>Improving Classroom Practice</th>
<th>Initiating New Activities</th>
<th>Implementing DoE Policy</th>
<th>Changing curriculum</th>
<th>Personal gain</th>
<th>New Experiences</th>
<th>Practical Skill Improvement</th>
<th>Meeting with peers with similar interests</th>
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Comments:


- Verbally to the Subject coordinator
- Verbally to the Faculty
- To the staff as a whole
- To interested parties (specify)
- In a Journal
- In a Portfolio
- In Writing to the faculty
- To nobody
- Other (specify)

10. My teaching has improved because of my Professional Development. Please circle response.

   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

11. Relate your best experience from PD.

12. What Learning Areas (subject area) do you belong to? Specify all relevant areas.
B-3: PD Participation Results

### Difficulties with extra PD participation

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<th>No. of responses</th>
<th>Percentage</th>
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<td>Financial Cost</td>
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<td>Travel Involved</td>
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<td>Other</td>
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### Teaching has improved because of PD

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<tr>
<th></th>
<th>No. of responses</th>
<th>Percentage</th>
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<td>Strongly Agree</td>
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<tr>
<td>Agree</td>
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<tr>
<td>Not sure</td>
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### Reporting Of PD

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<th>Responses</th>
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<td>Portfolio</td>
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<td>To Nobody</td>
<td>5</td>
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B-5: Brief Analysis of the Whole School Survey

The survey asked questions on:
- frequency of PD
- types of PD undertaken
- reasons why PD may not be attempted as frequently as one would like
- most worthwhile type(s) of PD and why
- best experience of PD
- how PD is reported or recorded

In retrospect, the author should have made the survey little shorter and insisted that it be completed during the meeting time. Other staff who have required information from the whole staff have done this, as they found that only about a third of surveys were handed in otherwise.

Some sample results of the survey:

- Number of respondents: 48%
- Male respondents: 29%
- Female respondents: 71%

From a list of school staff it was found that the actual teaching staff gender breakdown is:

- Male: 48%
- Female: 52%

The College has predominantly an experienced staff and there are few young teachers on the staff. The average number of years of teaching is 19, with some other results as shown:

- Extremes: 0.25 years (1 respondent) to 30 years (2 respondents)
- Median: 19 years
- Mode: 25 years
Please refer to Appendix B-3 for PD participation results and graphs. All respondents said that they participated in regular PD. Most staff (90%) stated they would participate in more PD if they could, 3% of staff were unsure, whilst 7% said they would not – they believed they do enough already. It was interesting to note that the staff who claimed they did enough had been involved in much more PD than most. One had been involved in a number of programs including the Eleanor Davis program that involved shadowing a principal for some days and the other respondent was not specific.

The main responses for reasons given for not being able to participate in extra PD was:

- Limited days available for school release 85%
- Financial cost involved 63%
- Travel Involved 52%

Other reasons given included:

- preferring to teach their own classes rather than leave them to a CRT
- time involved in leaving extras creates an additional burden
- Timing of PD is often not appropriate, for example some activities are in the capital city from 4:30 to 6:00 p.m. and as a result to travel for at least 6 hours for a 1.5 hour activity is not realistic.

Most of the staff seemed to have predominantly the same types of wants and needs, and though the types of PD they liked best varied, there did not seem to be any glaring differences between the faculties. Most indicated they wanted PD that would help in their classroom – give them hands-on activities and strategies to use.
It seems clear (from the graphs in Appendix B-3) that having a limited number of PD days available for Professional Development is the major contributing factor in reasons why staff may not participate in extra PD. The school in 1999 provided individuals with $220 to spend on PD, which was meant to cover cost of the activity, CRT payment and travel costs where appropriate. For many activities, such as the subject association conferences whether they be the Physics Conference, Chemistry Conference, STAVCON or similar, the cost to non-members of STAV (Science Teachers Association of Victoria) is approximately $200 for registration alone. If one is a member, then the fee is reduced by $100. We only have three individual members of STAV in our faculty and so financial cost was seen as a deterrent. Although the figures represented the staff as a whole, the results were transferable to the science faculty. The majority of the staff as a whole (93%) felt that their teaching had improved because of PD. A few staff indicated that PD had not really changed the way they teach.

It was interesting to note that 76% of the staff indicated that they report their PD experiences verbally yet the faculty coordinators approached said that in fact reporting rarely occurred due to other important business which needed to be completed during the meetings. Many respondents claimed that few people would be interested in their PD anyway, so there was not any point in reporting much other than to say that something was worthwhile or not. The reporting and recording of PD is one of the objectives of this research, so it was interesting to note that few staff actually record what they have done or how they have actually used what they have learned.

Appendix B-4 shows the main reasons given for undertaking professional development. Ranking here was based on a scoring range of 1-6 for a ranking from highest to lowest with the same numerical points being allotted. That is, a score of 1 for Professional gain meant it was the highest
score for that section and was given one point. A score of 6 meant it was of least importance. The lowest overall score therefore represents the response that had the highest rank of the responses.

The reasons why participants took part in PD was varied. The vast majority seem to place a high priority on undertaking PD for professional gain, but a low priority for implementing initiatives. It appears that the order of priority for PD participation from most important to least important was:

1. Professional gain
2. Practice/ Skill Improvement
3. Information
4. New Experiences
5. Personal Gain
6. Implementation of Initiatives

It should be noted that all of these categories had responses from 1-6, and there were many individual responses for each of these reasons. Only one respondent said that they were all of equal importance. However, there seemed to be a trend to choose conferences, workshops, university courses and the reading of Journals and magazines as the most effective forms of PD experienced by most respondents.

50% of respondents had never taken part in a teacher practicum, and a number of the respondents even queried what this was. 46% of respondents had never taken part in a University course as professional development, yet there were 11% of respondents who claimed that University courses had proved most beneficial or effective type of PD they had undertaken. 21% of respondents had never taken part in holiday workshops of any description and a few commented that holiday time
was too important to their mental health.

A number of respondents (29%) claimed never to have used the Internet to help in their PD and some even stated that it was too slow and frustrating. 18% of respondents claimed that team teaching and networking was a waste of time, whilst a further 18% claimed never to have taken part in these activities.

Travel, and the associated time involved, was one of the main barriers mentioned as a reason for not participating in some of these activities.

**Some comments of what constitutes good PD:**

- Thought-provoking, challenging, interesting
- Rekindle the spark or enthuse
- What can be used in the classroom
- Survival in the classroom
- Realistic, first-hand experiences
- Those that force us to look at ourselves
  - what and why we are doing things
  - relate to a teacher’s life
- Involvement of all staff
- Support needed
  - debriefing
  - follow-up
  - clear, inexpensive prac.
APPENDIX C: SCIENCE STAFF QUESTIONNAIRE

C-1: Details of the science staff questionnaire

A few weeks after the whole staff survey, I spoke to and distributed a mini-survey that required some written response to the science staff. It was intended to get the staff thinking about PD and reflecting on their teaching and learning experiences. I was hoping to get a feeling of their needs, and to give me some focus for the oral interviews. Staff again had time commitments that meant that they didn’t get these responses back to me as quickly as I might have hoped. In fact some lost the copies and requested replacements.

On this small-scale survey staff were asked to:

- Describe how their favourite teacher influenced their teaching
- Describe a positive or negative incident that has affected them
- Explain their greatest success as an educator
- Explain their greatest challenge as an educator
- Indicate what topics they would like to explore to help students
- Indicate what types of Professional Development would help implement these ideas

There was initially a section on the philosophy of teaching and learning, which was later deleted as staff felt uncomfortable answering that and some commented they were not aware of their own teaching and learning philosophy. The survey follows, but it should be noted that staff had plenty of room to write their responses to the following questions:
Questions asked of science staff on reflections:

Reflections on My Learning Experiences:

1. Describe how your favourite teacher influenced your teaching.
2. Describe a positive or negative incident that has affected you.

Reflections on my Teaching Experiences

1. Explain your greatest success as an educator.
2. Explain your greatest challenge as an educator.

My Vision of Teaching and Learning

1. To create the "School of Best Practices," I would include the following teaching and learning activities
2. To help my students, I would like to explore these topics
3. To help me implement these ideas, I would like these types of Professional Development
C-2: Sample Comments from Science Staff Survey

Re: Favourite teacher:

"My favourite teacher made me feel comfortable in the classroom as an independent learner. By doing this he was able to inspire his classes to perform to their optimum. I believe he was a visionary who believed in himself and inadvertently passed this on to his students. This is the type of atmosphere I try to create in my classroom, for the same types of reasons. I've learned like he did that this doesn't always work but now and again we have some success."

"My favourite teachers weren't necessarily the 'best' teachers but the information they imparted interested me. They influenced me to continue to study in the fields of biology and geography and are responsible for what I am doing now."

Re: Positive or negative incident:

"Entering the Science Talent Search and having some minor success"

"Having students return and chase you up after having achieved in the community is tremendous... A letter arrived from a student thanking me for helping give their life direction and purpose; we can't ask for more than that!"

"Several negative pressures have caused me to lose enthusiasm for Science teaching:
1. Constant change of curriculum
2. Reduction of staffing – larger classes and greater workloads at a time when we are expected to implement and evaluate change.
3. Increased demands to assess all students on uniform criteria when there is little time to network with colleagues to ensure consistency"

Re: Greatest success as educator:

Staff seemed to find this section a little difficult, with many saying there was no major success, buts lots of little thankyous kept them going. Some other comments:

"Every day happy students leave my classroom is a success. This can't always happen
obviously but it still gives me a 'buzz' when I teach an innovative lesson that students can appreciate."

"Being a first year teacher and being given a Year 12 Chem class. Working through the course and gaining 100% pass rate. A few years later having a student gain 100% in Chemistry."

"Having kids say 'That was great' or 'Thanks for teaching me this year' or something along those lines is what keeps me going."

"Watching students do well and keeping tabs on their careers. My greatest success was Susi who is now in Ecotourism and whose mum keeps me up-to-date with what she is doing."

Re: Greatest Challenge

"Motivating and connecting with the students who have no interest in being in class (let alone participating in the work)."

"Boys who seem to have learned little during their years of primary and secondary studies. They often have low self-esteem, but are noisy and disruptive. I find is really difficult to engage these students and to implement and individual program for them while teaching a demanding class."

"Getting students to believe in themselves and their abilities when they have little faith in themselves"

"Trying to stay motivated and focused when external factors take away from your teaching like extras, POR tasks, stress and so on."

"To find enough time to plan and prepare a stimulating lesson."

Re: To help my students, I would like to explore these topics:

"Use of technology in experiment work"

"In my view one of the most critical things occurring in our schools is the lower performance of boys. I believe it stems from not schools but what the boys bring to school from the community. Schools have the responsibility for defining the problem and take steps to rectify
it. How do boys define themselves? How do they see themselves and their environment? What can we do to improve boys’ performance?"

“Student-centred learning.”

Re: Types of PD I would like:

“Technology training – currently doing this”

“Interface, experimental work”

“Catering for learning styles, teamwork activities, motivation. They must be practical, useful ideas that can be implemented in Science classes. Not the theory but what works.”

“More pupil-free days to work as teams to develop CSF courses for Junior Science and Maths; or the alternative which is much more complete resources supplied by the DoE or the BOS at affordable prices. For example, CD’s which would be useful in some instances cost several hundred dollars and we only have a few CD machines.”

“If the Department is so intent on determining what students can and can’t do in terms of outcomes, we need support in the form of sequential and structured programs for students if we are ever expected to remediate these deficits.”

“Boys and the masculine thing in school, and anything related to it.”

“Organising student-centred activities, cooperative group work and use of technology in the classroom.”
C-3: THE S.E.T. EXTENDED PD PROGRAM

As a PD activity it seemed the extended PD program was very valuable. Some staff felt they had not learned anything new, but had revisited prior knowledge that they had either forgotten about or had not used in some time. A couple of relevant comments:

"I thought it was okay... I find that after teaching over a number of years I didn’t find anything that is way out of the ordinary where I went, ‘Hey, yeah, that is good, great stuff...’"

"I didn’t find that it was very successful, but I did enjoy the activity as a group... It reminded me of a lot of things I’d forgotten. It sharpened up my practice."

"The ones I found boring were not the ones necessarily aimed at kids but ones that were aimed at improving our methodology... I just didn’t get enough chance to get my hands dirty, so to speak…"

One particular activity involved the use of POR (Predict, Observe, and Explain) but other sessions were also seen as being useful:

"I think one of the first sessions that we did we had the POE – I mean, we have been doing it, I have been doing that sort of thing without realising exactly that was actually what I was doing…"

"It made me refine my questions and sort of go on the investigative way and explanations ... Ask more probing questions"

"I know the Technology would have been interesting to go further with...(but) it makes it really hard when you know you’ve got all this technology and stuff you can use in your classroom but you are unable to do it due to lack of resources."

One very valuable aspect of the program was that so many of the faculty were taking part. As part of the program every week involved “homework” where staff had to go away and try to use some
aspect of what they had learned and then bring it back to the larger group, many felt that it got people talking openly. The communication in the faculty was perceived as being very good:

"You've got people to bounce ideas off. You all went through the same thing. Instead of one person going away and reaping the benefits and trying, fairly unsuccessfully, to deliver it to the rest of the mob, we all went, we all saw and we all evaluated together, and we all came up with different ideas, and we share them. Everybody understands what's going on, it was really good... It gives us something to talk about and to work with."

"I think when we work as a group we also come to see what others are doing and how. When we all are doing it together, this is how things must be done or how the students are interested – so if all of us have a similar sort of experience we know what is expected. And we are all trying to do the same thing in teaching."

"I think that was great. I think our science department has really benefited from it. The bonding of us as a team, and people are working more as a team than what they were previous to that."

Attendees at this PD also shared a meal break. In a relaxed atmosphere over food and drink, relationships were strengthened and new relationships were made. It was a good experience mixing with so many primary teachers who were interested in improving the science in their schools, as well as being able to mix with other secondary teachers from the locality.

Soon after this activity, the science staff had another course writing day to improve our current CSF courses, and the quality of the work coming out of the day through the positive sharing was very good. Everybody seemed to be cooperating well and many made comment to the value of working together.
C-4: Proforma for Reporting PD

Title of Session: Date:

What did you hope to get out of the session?

Did it meet your objectives, goals or outcomes? In what way?

In what way(s) could you use what you have learned in the classroom? Be specific.

Was there anything you found lacking with the session? How could it be improved?

Suggest other resources or ideas which would complement what you have done in this session?
C-5: Notes on Reflection to assist with reporting of PD

Reflection:
Describe what happened in the session Describe your feelings

Strategies that worked; key learning ideas

Insights for future lessons

Key ideas I have learned… Things I still need to learn…
Activities I have tried... Data I have collected...

How this session has helped me meet my goals:

Produce and attach a handout, lesson outline, worksheet, test or whatever, based on what you have learned in this session.

After using this artifact in class, do you think it effectively displayed what you learned?

Could it be improved? How?
APPENDIX D: THE YEAR 8 SCIENCE SURVEY

D-1: Year 8 Science Questionnaire

Year 8 Science Questionnaire

You recently completed a topic on magnetism. The following questions relate to that topic.

1. What did you like about the topic "Magnetism"? Be specific.

2. What did you learn about magnetism? What can you remember?

3. Explain how you were taught this topic. How was the teaching of this different than other science classes? (What did your teacher do that was different?)
4. Did you feel you learned more by this method than you may have otherwise done?

5. What area of this work did you not understand (if any)?

6. Would you like to do more topics in science with the approach used in magnetism? Why or why not?
7. What do you enjoy most about science?

8. What do you enjoy least about science?

9. Do you think your teacher can make a difference to your enjoyment of science? How?
D-2: Sample Comments from survey

Sample comments from Tegan’s Year 8 Science classes on the survey taken to measure whether there had in fact been any ‘change’ in her approach after participation in professional development. The students were given questions relating to their recent project work on magnetism.

Some students claimed they knew little about magnetism, yet others insisted that working on their own had made them learn more. The following are a sample of typical comments:

“We learned more because we had to study off our own backs to do our poster.”

“We were allowed to work at our own rate, but given a certain time to have it finished.”

“I learned more this way because you can find things that you don’t know about, whereas if the teacher was telling you stuff you may already know about it.”

“I enjoyed the practical activities such as what magnetic forces look like.”

“I learnt all about poles and lots of other stuff. I can remember how to make an electromagnet.”

“One part that was different was that we were given a sheet with pracs on it, and if we didn’t do it, it affected our assignment.”

“I liked doing the experiments.”

“It wasn’t a normal, boring class. It was fun.”

“I learnt a bit. I can remember that magnets have a North and south poles. That they attract metals like iron and are used in machines.”

“Well I know I did learn something. It may not be a big deal but all I can remember is that I know that magnets that both have N’s on one end do not join together.”
APPENDIX E: THE FINAL GROUP CONVERSATION

For this final conversation all members of the research group were present: Myrna (myself), Carol, Jason, Tegan and Debbie. It takes place only days before the end of the year after two days spent together as a faculty rewriting new science courses according to the CSFII and the new Year 10 Science courses that are to run next year. The previous two days had been spent having our own PD in-service with our own staff—reporting on STAVCON activities, improving course outlines for the next year and being shown practical demonstrations on the use of some new equipment by colleague Mike.

M: I basically wanted to talk to you about how you may have changed and how these changes relate to PD experiences over the past 12 months since we last spoke, or how they have been improved. We’ve had some extra money for PD in Science. Has the extra money available to the faculty actually helped improve the PD that’s been available to you?

It is clear initially there is a technology component that challenges the members of the group.

Debbie, as the recently appointed Science Coordinator leads:

D: I think it did. We’ve had more options available. More people got to STAVCON than before, and the science conference in Ballarat. And these last two days we had together here. They were...

J: Without that funding, we wouldn’t have done that, particularly the last two days.

D: And that’s probably vital.

M: And the last two days was when you were working on the course outlines (D: Yes) and trying to get things aligned. Have you been able to work on any of the PD areas that you thought might have been a bit lacking until then, for example learning technologies. Most of you indicated that was an area that needed improving...

T: With what Mike did yesterday, that was one of the two days; we managed to look at a bit of stuff with the laptop and what you could do with the TAIN equipment.

M: So have you been able to use things like PowerPoint in your classrooms at all?

T: No. We need more in PD in learning technology.

C: No, we need more PD and more money to fund that area.
T: We need more overhead projectors if we're going to be able do it, too. Or access to them... data projectors I mean.

D: I think there are plenty in the school; it's just knowing how to access them. There are four to six of them.

T: If there's 90 or so staff and we're all wanting to use the data projector at once, it makes it very difficult.

D: However, it hasn't been demonstrated yet by the staff that they have this need - I mean all four are not being used to their fullest extent.

T: I don't even know where they are.

C: No, they're not easily accessible. I believe there is one in the senior staff room and library at study centre now, but I'm not sure about that. Every time I went to use one it was locked away in Kali's room and she wasn't there.

D: On the junior site Sandra has them, and so does the library.

M: So we don't have time. We don't even really use things like PowerPoint much and...

J: We also have the Aver Key, which can be used as an alternative to the data display.

M: But proposing using a digital camera in our classrooms...Do you think we could use that more?

C and D: Oh yes. Definitely.

D: I think the digital camera is being used this year more and more. (Yes). As people are seeing what can be done with it more people want to use it. This year I took it into a rat dissection with my Year 9's. The kids were really rapt. They love getting photographs of themselves during those sessions. They just love pasting those photographs of what they've done during that day into their book. I think other staff have used it a lot more too.

M: I like your photo display that you've got from the Biology trip up in Room 31.

C: The young scientists at work!

M: Yeah, that's good. A great display!!

D: Some of the display at the back (noticeboard) went missing, and it was hard work to put up a display like that, but anyway...

C: But it was effective though because it moved around the place. It was up on the Year 12 window as well and quite popular. (Nods of agreement and 'Yes' from others.)
I try to bring the conversation back to talking of the PD we had all participated in last year and how it may have helped change our teaching. Again Debbie leads in and by using ‘people’ is speaking for others, and is not using the collective ‘we’ as an ‘I’ commitment:

M: Last year when we did that extended SET work through Monash, we all did things that we said yes, that was reasonably beneficial, but have you actually since used any of that stuff? Or have you found that you’ve gone back to using things that you know work?

D: I think new concepts have developed through the classes. People talk about different approaches they take to class activity, POE, that sort of stuff.

T: And a lot of it you might have been doing before and just reminding you that it’s there. I mean I’ve used POE’s before the SET program and still continue to use them and probably might’ve changed the emphasis a little bit in them or structured them up better because of SET but I don’t think the way I teach has changed all that much.

Tegan used ‘you’ as a notional self or what others might expect, whilst in the next exchange Jason more strongly positions himself than Tegan by use of the pronoun ‘I’:

J: In terms of technology... I’ve started to use... or I’ve used it twice, this year in classes. But just doing it that twice I’m feeling a bit more confident. I’m also encouraging students to use PowerPoint for their assignments. And that’s happening more often.

C: But that is time consuming isn't it?

J: Yes.

C: Some days they (students) get really good at it and really quick in setting up the slides.

M: So it’s a practice thing?

C: Yes. And it’s practice for us too.

Jason’s storyline now implies positioning of others, whilst Carol’s and Tegan’s comments show conditional commitment, in fact Tegan tends to distance herself by using ‘you’:
J: And now that we have delayed using of these probes and things because we know that our school has been purchasing them and getting more. But now that Mahesh has shown us and how to use them, it is actually quite straightforward and I for one will use them in at least one prac next year. (Others: Mmm, Yes, mmm)

C: I think we'll all try one and build up from there if it's successful.

T: Based on enthusiasm on how you use them.

C: See I'll be able to use those sorts of things even in Maths that has data, for analysing the data statistically. Which is one of the strengths of real-time data.

J: Yes.

In the following exchange I asked after the morale in the science faculty, and it comes out that the group does not see that improved communication between members is necessarily the same as improvement in working together:

M: I wonder also about other things, about the general morale of the science faculty. Has it improved over the past 12 months to two years in comparison to what it may have been when we first amalgamated?

C: Oh when we first amalgamated there's no comparison. (Laugh) I think the morale has steadily increased. (All: Yes).

M: Is that because we are communicating more?

J: I think it's because we work better together as a team. There's been the emphasis on working together, sharing resources. With the extra funding we've made the effort this year to have the full science team together at the end of the year. And that's helped.

D: I've hoped that people are working more effectively together as a team. I think we've come along way.

C: We just have to keep working together.

Debbie has shown herself again as a leader of the faculty. She has essentially patted everyone on the back for a job well done.

M: I don't think people seem as threatened as they used to. I think in the past people used to keep things in their filing cabinet and not share, whereas people are much more open with their sharing.
C: That's a facet of communication, people working together as a team, things automatically come out unless if they got put aside in your mind therefore you don't share them if you put them in your folder. But I think also the recognition from DEET came at a very important time for us, the recognition that science needed working on, that science is important. That emphasis was probably just at the right time to boost us.

Carol is referring to the extra funding made available by the State government for science education, which had a flow-on effect at Bangarra in that we were involved in the research project for DEET and were able to use funding to do extra professional development programs.

M: How would you actually implement some of the changes in your own classroom? Like changing courses with the CSF, changing a topic. How would you go about doing it?

C: Like we did before - Have a group session and see what works and talk about what doesn't work. I think one of the things we have to avoid are the recipe pracs, I think we have to try and work through and do the POE things, rather than say this is what you do, and this is what happens and it happens every time, and it's easy to explain and we forget about it.

M: You want kids to learn more on their own?

C: Yes, less structured

D and T: Absolutely.

C: I think that's something that you have to work at very hard and I don't think it's easy.

D: Going back to the interview earlier where we were saying it takes so much preparation to be a good science teacher. (Mmm)

C: It's easy to be a mediocre or poor one.

T: But if you want the classes to run well, you really need to put that effort in.

I again try to steer the group into talking of the way we can report on our PD experiences to the other members of the science faculty:
M: Now, about the reporting aspect. The other day when you got the people that had been to STAVCON reporting on their elected session, did you find that was really good?

C: I actually missed that bit.

T: I missed it too.

D: You were doing something else at the time if I remember correctly.

T: Say when people go away on a PD having people report on what they've done as a group is beneficial really. I'm sorry I missed that bit. I think I was in the Ag Yard.

M: Now someone that was there, Jason ... did you find that was actually beneficial?

J: As a person who has been on the conference I've heard from the staff during the conference, so I wasn't picking up all that much during that particular session, but there were a couple of staff who weren't at the conference.

D: Because you were working on your computer at the time. (Laughs)

J: But I was also listening. (Difficult to decipher mumbled comment here, but it was obviously made in jest.)

Jason had actually been in the room at the time the oral reports were being made, however, he was sitting at his laptop doing course preparation for the new 'Chemical Detective' unit that he was to teach the following year.

C: I think that's true. For the three of us who had been on the conference, we'd talked about it on the way home anyway. I think for the others who weren't there it was valuable.

J: And I think it's a good way of reporting back.

Jason has conceded that reporting back is in fact a useful way of relaying information to others. Again, I try to get the reporting aspect clarified:

M: That's what I wanted to say. Do you think we should have a specific way that we report in the science faculty, so that everyone reports in a particular way? Would you like to report as a group or...

D: I think it's invaluable for people to report about their PD when they come back. Sometimes they might have something to share with the whole group, and that's good.
I don't think necessarily that depending on where they've been, it may not be appropriate to share with the whole group, or just part of the faculty group.

T: Being a teacher of Ag, I know that goes beyond the Years 9-10 science, or electives for Years 9-10, one thing I get disappointed by is there's no-one to report to. No one is interested in agriculture and it doesn't sort of fit with anyone else. So you've got no one to report to. You do your PD, you're bursting with ideas and you've got no one to tell them to. It can be frustrating.

M: Do you think there might be any other skills that might be transferable to science?

T: Most of the things that I come back with from the Ag conferences are only really agriculture and...

D: Is that how you could network with Angus at Marra College and talk about things... do you do that?

T: Not really. He's approachable, but he's not into it... I would think if you go to the trouble of going to a PD it's nice to report back. It makes you feel like you're part of a team even if you only teach a subject by yourself sometimes... Like Psychology, I don't know that they feel like they're part of the place, even though they basically are. Because you don't hear about the other subjects. But the chemistry, physics, biology, often you hear a lot about things because there's more than one of us.

M: I gathered this from the other interviews, that none of you want to do a written report (nods of agreement) so how do you feel about the report that Mary's requires? Do you like doing that, or do you think Mary should maybe change that aspect?

C: I don't do it - I forget.

T: I do it. They're pretty short, it's not like you have to go into a lot of detail. You don't have to write an essay on it, it's just a one-liner in each question. And at least there's a record that you've gone, but I don't know what happens to it after that. It just goes into a folder doesn't it?

D: I think so.

J: I'd forgotten about it. I didn't do one for the Science conference.

D: I did.

J: You're a good person. (Laughs)

D: Organised. (Laughs)

M: I just wonder if it's a habit that we're not used to doing.

D: I would be hoping that if I did it, it doesn't end up anywhere important.
T: How many of us look at the folder anyway, to find out what other people have done?

J: None

D: I think it's far more worthwhile sharing what we've done.

From the following exchange it is clear that members of the group would rather report orally rather than keeping up a PD journal or portfolio. It is also worth noting that they stress the importance of actually attending the meetings for this to be beneficial.

M: As far as reporting, how would your ideal way be do you think, if you were able to share, Tegan?

T: I'd rather do it orally. I'd rather tell people what I've been to and what I've found out and where I think it fits into my classroom.

J: Oral or demonstration. Like having Mike demonstrate the TAIN stuff was really valuable. (Others: Yes) Having you talk about the plastics Debbie was... really good. (Others: Yes, Mmm)

M: And then you know whom to go to see if you want more details if you need to when....

T: But then I suppose that brings up the problem of a new teacher coming into the school who missed all of that and that resource base isn't there and you don't know who to turn to. I have been here, coming into my fourth year and I'm still trying to find out who knows what.

J: But a new teacher coming into the school is not going to go to a PD folder.

All: No, no!!

T: A PD folder is not the answer!!

C: Even the oral reports for the PD we were all talking about polishing details or adding extras to something that's already a framework. Maybe we should not emphasise this so much and move in this direction. Again, that's not valuable to a new teacher. They need the skeleton first.

J: Yes

D: We made our skeleton of our CSFII course again and we've got on it things like plastics, things that have come out of PD, the TAIN stuff and whatever, and...

T: As it evolves more could you put even notes on that like "See DA about plastics" or something like that.
D: Of Course!

T: For a new person who's coming next year, you could hand them that and they might say ooh, I don't know much about plastics and come straight to you and you could sort them out from there.

D: That's where I think it's important to keep working together as a team. I think we're getting better and better at that.

C: I think that also brings in the critical factor that everybody needs to go to faculty meetings because this is when you ask the questions. You say, look I'm ready to start on plastics right; I don't know anything about it, who can help?

M: I've been to faculty meetings and I think most people seem to be going.

C: Most.

M: Are there people that need to go that aren't coming?

D: That's sometimes the case. There is a conflict with learning area meetings. I know that there have been three of our teachers that haven't been coming, because it's the same time as their other learning area, which they are probably teaching more. (Mmm)

M: Is there a way we can get around that?

D: I believe they are looking at re-scheduling the meetings, and the mix with each other Learning Area. I'm not sure exactly what they're doing, I think they might be changing the technology and science as they are ones which clashes and affect us.

T: I have to be at both.

M: Me too, though I never get to the technology ones.

J: I think we need to avoid a 3-week cycle though. It's too long.

T and C: Yes, it's too long. Way too long.

J: A 2-week cycle we don't often meet until monthly anyhow.

T: Even if it was a Wednesday or Thursday they could split the faculty meetings up a bit, but you wouldn't want the teachers going to all 4 would you?

C: No.

D: The biggest bugbear is that a lot of teachers stick their thumbs at meetings. (J: Yes.) And you have to be careful with that - how many meetings are on.

C: Absolutely!
In the final exchange I decided to get a feeling from the group as to whether they felt the research we had done was worthwhile. In each response each member is being positioned in relation to this research:

M: One of the last things I need to ask, and you can say whatever you like, I won't be hurt or disappointed or anything is, what do you feel the purpose is of the actual research that I've done? (PAUSE). Or the benefits?

J: Purpose or benefit?

M: Benefit, perhaps.

T: The benefit is that you're seeing that the money is going to good use and hey, give us some more because it's being used properly. I can see how we've got evidence on paper in your reports that we have improved, and things have improved because of the extra PD we've been able to do.

D: I think there's a benefit in that we've been able to look at our PD and the way we approach it... And the usefulness of it... Talking with each other more.

J: Another benefit, which would probably be external, would be all kinds of PD to know this kind of thing, which we as teachers get the most out of.

C: How we learn.

T: Very important.

M: I don't know that this is relevant except that I'm sort of saying how I feel... that having interviews with you... you were my little focal group... I found that although you are all very different people yet you all basically had the same ideas. And I knew that anyway, but it was nice to have that kind of confirmed. (J: Yes) That you all have the kids at heart, and that you all went away...

D: Are we a biased sample? (Laughs)

J: We're all teachers!!

M: But you're all very different people even though you are all teachers. I mean Debbie and Carol, you teach in the same area, but you still all teach in different ways, and you have different areas of expertise and yet you all basically go to PD for the same type of reasons. And you all seem to want to report in a similar way, and I just thought that was very interesting. That was good. It just sort of confirmed my belief in your professionalism actually. So thank you for working with me.

D: So does this mean you're taking this to Mary to say change the PD form, so that we don't have to fill it in? (Laughs.)
M: No, I just thought it was interesting... It was good for me.

C: I just wondered; I imagine that most schools would have a similar attitude towards PD.

M: Possibly. Anyhow, are there any other comments? (Pause). Again, thankyou very much.

Thus concluded the group conversation.
APPENDIX F: Ethical Issues

This research relied on the cooperation of the teachers. The volunteer teachers, after being given a simple language statement (See Appendix I) of the purpose and procedures of the research will sign a consent form (See Appendix H) indicating that their names will remain confidential and that the interviews will be recorded by audiotape. The participants were supplied with a transcription of their interviews that they checked and signed to show they had seen and agreed with the contents of the transcriptions as a true statement of what had been said.

Approval for this research had been obtained from the school principal, from the Victorian Department of Education, and from the Ethics committee at Melbourne University.

The time required for the initial research on the value of portfolios required about twelve months. The subsequent study of professional development experiences occurs over two more years, since the type of activities the staff desired may only occur once a year.
APPENDIX G: Professional Development Policy

Dear,

I am presently completing a research project in conjunction with the University of Melbourne and the Department of Education (Victoria). My thesis is concerned with the formation of a professional development policy for science, in particular the reporting of PD. I am investigating the current trends and types of professional development being undertaken by the staff at Horsham College, and more specifically the science faculty.

I will be looking at the types of professional development which is considered to be effective (and non-effective) and why; and how the PD undertaken by individual staff may be able to benefit the whole faculty and the school. This will possibly involve formation of portfolios of their professional development. Little research has been done to date on what constitutes effective PD and the expected outcomes. I will make audio recordings of conversations and I will also use questionnaires. I will meet with individual and small groups to discuss the data collected. In the transcription or reporting complete anonymity for all staff will be maintained.

All information gathered from the participants shall remain confidential as required by the University of Melbourne’s ethics guidelines.

Your participation in this project would be gratefully appreciated. Please sign the consent form attached.

Myrna Allan
M.Ed Student
Consent Form Re: Professional Development Policy

Please return this form to Myrna Allan

I ________________________________ acknowledge that:

1. The procedures of audio recording have been explained to me to my satisfaction.

2. I have been informed that I may check the transcript of the audio recording and any unprocessed data.

3. The project is for the purpose of research.

4. In the thesis I will not be identified.

5. I have been informed that the information provided will be held in confidence subject to any legal requirement.

6. I have been informed of the ways in which the information will be safeguarded in the Department of Science and Mathematics Education at the University of Melbourne.

Signature of volunteer: __________________________________________

Date: ___________________________________
APPENDIX H: Plain Language Statement

The thesis is concerned with the formation of a Science Policy for Professional Development at Horsham College. The development of a policy for professional development is designed to enhance the communication levels between the staff, and the evaluation with colleagues in this matter form the basis of this research.

The investigation is to be exploratory and case study techniques will be employed to isolate and explore aspects of professional development within this school site. The context of the proposed study is the formation of a Science Policy for effective Professional Development in a large, rural Secondary College.

The Science faculty will utilise the report and the significance of the study may take the form of a methodology to use for further Professional development policy work.

The methodology is directed towards a process of case study research that observes the characteristics of an individual unit, in this case it would be the science faculty. Through the analysis of the case studies, our understanding of the manner in which a policy for PD is developed and put into practice should be clearer. It is likely that this could extend into some action research on developing the policy for professional development for the whole school.

The main areas concerned with the collection of data are surveys and interviews. It is possible that formation of portfolios of professional development will be developed. Other means of reporting of PD may also be investigated.

Subjects will be required to:

- Complete a survey on their professional development
- Complete an initial interview to recount their experiences of professional development
- To allow a reflection period to read and comment upon the written transcript of the initial interview
- To work in a collaborative group to interpret the themes inherent in this professional development experience
- To prepare a portfolio of their professional development experiences. This would require the collection and collation of all information leading up to the PD experience, together with handouts, and comments on how the PD was useful (or not), and ways the teacher intends to use the PD, for example a lesson plan or specific activity. Reflective comments will be required on the activity and their intended use.
- To attend PD activities and record feedback into their portfolio.
- To have additional interviews on the PD activities attended, and the appropriateness or value of portfolios in recording and reporting of PD.
Author/s: Allan, Myrna

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