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**Case study: Applying coaching and mentoring methods
to leading a secondary school science department**

**A thesis
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ABSTRACT

Heads of subject departments in New Zealand secondary schools generally have recognised expertise in teaching their subject and this expertise together with a mixture of leadership and organisational skills are recognised in their selection for the position of Head of Department (HOD). They seldom have formal training in leading staff. Single day training in job skills for new HODs is regularly offered at local education centres but few HODs undertake extended tertiary training in leadership skills.

This case study records the experiences of one secondary Head of Department as she does a literature review of coaching and mentoring principles and applies a selection of these principles to her work with her staff. The initial focus of the study was to use coaching and mentoring methods to lead the department in the implementation of differentiation; varying teaching to cater for the diversity of learners. The scope of the study broadened to encompass all coaching and mentoring interactions with department staff.

Both coaches and mentors work with individuals to improve performance in an area. The vision of mentoring moves considerably beyond emotional support and provision of sample lessons to developing staff in best teaching practice and developing the teacher's ability to problem solve for themselves. Coaching is described as the art of identifying the coachee's strengths and using this information to choose an effective approach in a given situation.

The case study is based on the journal records kept of selected routine interactions with department staff. The journal recorded examples which showed common patterns of interaction, and interactions influenced by the

coaching/mentoring literature. A second data source was questionnaire responses from staff who left over the course of the year.

Major themes that emerged in the data analysis were an increased awareness of the importance of learning needs when working with individual staff, and working strategically.

The Myers-Briggs description of personality preferences was used as a neutral framework for describing personality. Recognising the learning needs that arise from those descriptions gave a framework and guidelines for purposeful coaching / mentoring interactions with staff. The concept of learning preferences brought clarity to individual staff responses to different situations; instead of being idiosyncratic and unpredictable, they can be explained as due to the individual combinations of learning preferences in each staff member.

There were a variety of competing demands from outside the department and from individual staff priorities. Over the course of this study the HOD did extensive reflection on her selection of differentiation to cater for student diversity, on using a coaching/mentoring approach for this implementation, and on how to work with experienced staff who may have limited openness to change. The reflection increased her clarity about both the direction and the approaches, and this helped her maintain these in the face of competing demands.

There are few studies of New Zealand school middle-managers using coaching and/or mentoring. This case study contributes an example to show other middle-managers what can be done in one year in one specific context; using coaching/mentoring to implement differentiation in a department.

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CHAPTER 1: BACKGROUND

Introduction

In setting the scene for the reader, I introduce myself and describe the context for this study. There was a strongly felt need by most members of my school science department about the inadequacy of our current junior (for ages 13 and 14) programmes to cater for our current students. We selected differentiation as a principle that held promise for our students. In this section I outline department concerns, the development of differentiation as a response, and the link from this context to the research which uses coaching/mentoring methods to work with staff.

My background

I am the Science Head of Department (HOD) in an urban, multicultural, low decile (a descriptor of socio-economic status of the parents and community), coeducational New Zealand secondary school called City College (pseudonym). My qualifications are in chemistry and philosophy and I began this case study in 2008 after 18 years teaching in two low decile schools, beginning the HOD role in 2005.

I have been doing part-time studies for the past six years in educational leadership. I began these studies as I was very aware that my teaching techniques for students were the result of a year's training followed by two decades of steady refinement of practice, whereas my leadership of adults was very ad hoc, learning through the experience of trial and error on the job. Few middle managers in NZ secondary schools have any formal training in leadership beyond an occasional single-day course (Wright, 2002). I wished to learn how to lead my staff better by learning principles of leading adults.

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As my thesis topic, I chose to learn coaching and mentoring methods and apply them to my work with staff in my department. I began using these coaching and mentoring methods in an area of current curriculum development in our department; differentiation (variation) of tasks according to student ability. I found these methods beneficial in all interactions with staff. This case study focuses on tailoring my coaching /mentoring interactions with staff to their individual learning needs.

I elaborate below on the reasons for the implementation of differentiation in our department.

Why was there a need for differentiation?

The need for a major evaluation of existing teaching practices in our department became increasingly clear to me because of concerns about the following:

A majority of students below national curriculum levels

In New Zealand the national curriculum document outlines achievement expectations for student learning in all subjects in terms of Curriculum Levels One to Eight. For example, students begin their primary school learning at Level One, while Year 11 National Certificate in Educational Achievement (NCEA; the first level of the national qualification at age 15-16) courses are set at Level Six. The curriculum document acknowledges the 'bell curve' spread of students' rate of learning across New Zealand, however traditionally schemes and texts for Year 9 and 10 (age 13 and 14) have been set at Level 5.

The majority of our students used to enter our secondary school at Year 9 working at Level 4 (School document, 2003), while most New Zealand secondary science publications for this age group are pitched at Level 5. Therefore we have developed our own resources to cater for Level 4 students. However in recent years most students entering City College at Year 9 are working at Level 3 (School document, 2008) and the teaching staff are well aware of the urgent need to

continue to modify our teaching and further develop our resources for these students.

School-wide literacy and behaviour management strategies

The major school-wide response to dropping literacy levels was a two-year, 2003/4 school-wide professional development focus on literacy. Then in discussions about professional development for 2006, many staff stated they were reluctant to consider new teaching strategies to improve student learning until student behaviour improved. Therefore the year's professional development concentrated on proactive classroom management, resulting in a more settled atmosphere in many classrooms.

Changes to junior science assessments

Over the past decade junior student science performance, as measured by the department common tests, has been steadily dropping. These tests were pitched at Level 5 of the New Zealand curriculum. In 2000 approximately 50% of students passed these common tests. Student responses to tests indicated many students did not understand the questions, thus in 2001 we rewrote the tests to improve readability. In 2003/2004 we participated in major school-wide professional development on literacy strategies across the curriculum and implemented these into our science teaching. Despite further changes in teaching practice, such as reducing the scope of topics in order to free up time to concentrate on key aspects, in 2007 there were still only approximately 30% of students passing the Year 10 assessments.

Current methods inadequate

The science department discussed, repeatedly, over several years, how, despite the developments described above, our current teaching strategies and schemes were not catering for our lowest level students as they were not coping with our existing tasks. We were also dissatisfied with how well we were catering for the diversity of student ability levels within our classes. In any changes we were to

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make to the junior curriculum we were very aware of our responsibility to cater to the diversity of students in front of us. We believed collectively that lessons must both have sufficient depth to engage and extend students who may wish to continue to senior sciences, and use very simple and direct communication of concepts for those working at Level 2 and 3 of the curriculum.

In 2006 I talked with our Social Sciences department about their response to student literacy levels. They were providing multi-level resources and multi-level assignments for junior classes, and this differentiation of curriculum delivery caught my attention.

What is differentiation?

Differentiation is a principle that refocuses teachers on ensuring their teaching matches the diversity of their learners (Tomlinson, 2003). Teachers vary the tasks they are preparing to cater for differences in student ability and/or interest in a topic, or by differences in student learning preferences (Tomlinson, 2001). The term 'learning preferences' embraces a wide range of student preferences including: kinaesthetic/aural/visual preferences; whether students prefer to work individually or in groups; and whether they produce better work when it is presented as a poster, a written report or an audio-visual.

This range of task variations is in order to cater for the huge diversity of students in any one classroom; those who will engage readily in any topic, those whose best work is anything involving visual displays, and those who need a structured worksheet to show them the next steps to any task. Currently my Year 10 students are working on their choice of astronomy topic. This is differentiation by interest. Last term during their earthquake research the worksheet described criteria for demonstrating understanding at curriculum levels 3, 4, and 5. This is differentiation by ability in a topic. In some tasks students are given a choice of what size group they will work in. This is differentiation by one type of learning preference.

My individual learning and trialling of differentiation

In 2006 after hearing of the Social Science department's implementation of differentiation, Angela, the Specialist Classroom Teacher (SCT), began to teach me about differentiation in fortnightly one-on-one sessions. In October 2006 I attended a three-day seminar by a leading proponent of differentiation from USA, Carol Ann Tomlinson. I returned from this seminar sold on differentiation as an improvement on my current teaching practice, hopefully with flow-on effects to student achievement.

In 2007 I wrote a M.Ed. Leadership Development Project paper which I entitled *Evaluating Tomlinson's ideas for differentiation: A personal classroom trial*. The paper critiqued Tomlinson's presentation of differentiation, and then presented formal data gathered from one set of lessons created and used in my Year 10 science classroom in 2007. Student surveys indicated they enjoyed the tasks more than usual lessons, and they thought that they had worked harder than usual during those tasks. 30% of students received higher test scores than usual.

In addition to this formal study, during 2007, I created and trialled differentiated tasks and assignments in my own classroom. I often took an existing assignment that was already about an important aspect of the curriculum and modified it by differentiating the levels students could work at. When setting book work to reinforce concepts I began listing the questions required for different levels. My focus was on students doing a similar quantity of work but at an appropriate level.

First steps in science department implementation of differentiation

Moving from my own professional development of differentiation to setting differentiation as the priority for the Science department requires comment firstly about the dynamics in the department, and secondly my selection of priorities for development.

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‘Steer the waka’

I consider a portion of my leadership of staff is ‘steering the waka whilst they paddle,’ i.e. I set the direction of staff development and staff implement this. Put into a single phrase like this, it seems very autocratic, however staff conversations show me they trust me to consider carefully our departmental response to changing situations or external demands, to consult them about my initial ideas, and then to create training, timelines and requirements to implement these responses. This trust has been built from working alongside most of these staff for many years. Department staff have articulated on several occasions that they expect me to push them to make changes, commenting they will otherwise allow current demands to fill all their available work time, or that they will take the opportunity of a gap to reduce their work hours.

Setting priorities – do a few things well

Leaders cope with the pressures of constant change by standing firm within the priorities they set for their schools (Stoll et al., 2003; Davies & Ellison, 1999). The leader takes the stance that “we are going to implement a few things especially well” (Fullan, 1992, p. 38). This is precisely my response to the pressures of the new curriculum implementation coming at the same time as expectations of senior management and the local school cluster for the department to implement literacy strategies. Stoll et al. (2003) encourage leaders to analyse their context and strategically respond to the uniqueness of their specific context. I chose to focus on one priority, differentiation, and one means of implementation, coaching/mentoring, and to implement that to the very best of my ability.

Initial training in differentiation

In 2007 the Senior Management Team (SMT) decided on a school-wide implementation of differentiation and that because of my work with Angela Science would be a lead department in this. Angela worked alongside the Science department weekly to teach us about differentiation. I was present during these sessions and often described examples where I’d tried strategies she was

introducing. Angela introduced the concepts of differentiation slowly, as she wanted staff to be clear of concepts before moving to practical strategies.

Planning further implementation of differentiation in 2008

Collectively as a science staff, at the beginning of 2007, we had decided that the principles of differentiation held promise of catering for our diverse learners. We had made a start towards learning and implementing these principles in 2007 but staff needed further development and support to develop their early understanding and to implement these ideas more frequently in their classrooms. At the end of 2007, in a rethink of the implementation process Angela, the SMT and I agreed that I would be the face of differentiation to the department in 2008. I had some awareness of the difficulty of the change process through studying this process in an earlier graduate paper, so I deliberately chose a fresh aspect of differentiation as the focus for 2008 in the hope staff would be willing to engage in the continued implementation.

Strategic choice to help the change process

In 2007 the department began creating tasks differentiated by ability, interest and/or learning preference, but in planning for 2008 I chose to focus solely on differentiation by ability, and ability as measured by curriculum levels. I aligned our focus with a SMT mandate that in 2008 the school would report junior grades as curriculum levels. Previously the junior school had reported student grades using the NCEA grading system in order to prepare students for senior school assessment methods; however the school had made increasing use of AsTTle testing in Mathematics and English which reported results in curriculum levels. Now the SMT required all subject areas to grade assessment using curriculum levels.

Additional workload was one reason staff gave for limited buy-in to implementing differentiation in 2007. By selecting curriculum level as a focus for implementation of differentiation I 'hit several birds with one stone'. Staff could see this was not an additional imposition as it catered to one internal

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departmental 'felt need'- staff knew they needed additional resources to cater for Level 2 and 3; and it also satisfied an external mandate - they knew they needed to report to curriculum levels. I felt this was a strategic choice which improved the 'buy-in' by staff to implementing differentiation.

Interest in the research topic

I wanted to effectively lead the department into seeing the possibilities that differentiation held to improve teaching and learning in our junior classes, rather than simply in compliance to my requirements. I recognised that I didn't have the understanding of how to work with staff in this way and anticipated that learning coaching and mentoring methods would build skills in this area. Both Angela and Wendy, from the SMT, had repeatedly described coaching/mentoring as their preferred way of working. They seemed to be using this term to mean working with individuals in specific areas, in contrast to full-staff professional development. This piqued my interest, and I selected 'Applying coaching and mentoring methods to leading a secondary science department' as my thesis topic.

My original intention had been to focus solely on interactions with my department that were to do with implementation of differentiation. Implementation of differentiation remains the background for this case study; however over 2008 my focus changed to how I use coaching and mentoring principles in my work with the staff generally, including for implementation of differentiation. The majority of my interactions with staff were about myriad other issues besides differentiation.

Research question

The title of this work is 'Case study: Applying coaching and mentoring methods to leading a secondary school science department.' My focus is on selecting principles from coaching/mentoring literature and applying these to my work with staff. My research question is: *How can I tailor my coaching/mentoring approach to meet the specific learning needs of individual staff?*

CHAPTER 2: LITERATURE REVIEW

Introduction

In Chapter One I described my context as a secondary school Head of Department (HOD) concerned with our department response to our students' learning needs, and the selection of a coaching/mentoring approach to work with staff in addressing some of these concerns. This chapter reviews literature relevant to my context and to my response of selecting a coaching/mentoring approach to work with staff.

I begin this chapter by describing literature on the role of a secondary school Head of Department. Some significant gaps in the literature in this area are the importance of relationships, emotions, and context in understanding the behaviour of a HOD. In the brief review of relevant change literature, I touch on the prevalence of change in the recent New Zealand education system, the difficulty of change and suggestions of how to increase staff incorporation of new approaches.

In the section on coaching and mentoring the nature of coaching and mentoring in education is described. The tailoring of coaching to individual learning needs is reviewed in detail as I used aspects of this approach in my research. I mention the importance of understanding cultural perspectives in coaching work.

SECONDARY SCHOOL HEAD OF DEPARTMENT LITERATURE

The role of the secondary school Head of Department

Departments are the key organisational unit in secondary schools (Siskin & Little, 1995), and the HOD is a critical intermediary between senior staff and teaching staff at the 'chalkface' (O'Neill, 2000; Wright, 2002). In New Zealand their role involves both the pragmatic daily management of students, staff and courses

(“Secondary School Teachers’ Professional Standards,” n.d.), and ‘big picture’ thinking related to the future development of education, secondary schooling and how their subject area aligns with these changes (“Support for secondary middle leaders,” n.d.).

The Board of Trustees and the principal have accountability to the Ministry of Education (“National Administration Guidelines,” n.d.) for fulfilling various requirements, e.g. to describe steps the school is taking to improve student achievement, and the principal expects each department to contribute to fulfilling these requirements. However, like the protective role of a mother hen or the alpha male in a pack/herd, a HOD moderates the influence of such external demands on their staff (Fullan, 1992), and thereby the HOD frees staff to concentrate on excellent teaching. Each HOD works with staff to steadily improve teaching programmes by using a judicious mixture of push and pull forces in working with staff; encouragement, development, challenge and correction.

My study contributes to the literature on training HODs

Despite this critical role there is limited training of HODs in New Zealand. In a study by Wright (2002) the participants described their training and support as piecemeal and uncoordinated, usually requiring initiation by the HODs themselves. My case study contributes to the literature by providing an example of one HOD’s response to the limited training opportunities available.

Current writing downplays the effects of context and relationship

There is limited literature on the work of secondary school HODs (O’Neill, 2000). The literature on the New Zealand experience is even more limited. The literature that exists downplays the critical roles of context and relationships in the work of a HOD (O’Neill, 2000; Wright, 2002), focusing primarily on the administrative roles of a HOD which contrasts with the “reality of an HOD having a complex and highly people-centred job” (Wright, 2002, p. 141). Wright

suggests researchers have felt constrained by the formal styles used in traditional academic writing which avoid the personal and the local. Therefore many researchers have omitted the rich detail of the complex social context of their participants, for instance omitting reference to how their context has constrained attempts to implement change. Likewise O'Neill suggests consideration of each HOD's complex context yields valuable insights in HOD behaviour which are ignored each time schooling improvement researchers focus on more generic aspects of HOD practice.

The emotional dimension of HOD work

Complexity and relationship and the consequent emotional responses by HODs emerge as critically important themes in Wright's (2002) thesis which describes the daily work of three New Zealand secondary school HODs. Wright (2002) and her participants described the difficulties of some staff relationships with the accompanying intense emotions and discomfort. She noted the tension between what they considered acceptable emotions for staff to display; passion and caring, and ones that are expected to be suppressed; fear, jealousy, pain. She and her participants experienced a "rollercoaster of emotions" (p. 136), which contrasted with their "expectations of good management - control, common sense, calm and order" (p. 136). Wright reminds us that stress, tension and strain are commonly perceived as part of the burden of a HOD role which "makes it harder for [HODs] to recognise the situation as either inappropriate or something to resist" (2002, p. 141). HODs interpreted how they handled these stresses as a personal issue rather than part of wider social and educational issues.

Hattie (2003) strongly states it is time for experienced teachers to openly learn from one another. Developing this openness is neither a quick nor an easy process; despite the best intentions of being open and secure, people, the world over, act defensively whenever they may experience embarrassment or threat (Argyris, 1999). For staff newer to teaching, there is less threat to self-efficacy in seeking or accepting advice from others; I have often heard newer staff say they value others' input as they have limited strategies to respond to different

teaching situations. For experienced staff, underlying issues of self-efficacy restrict openness to using advice from others (Schein, 1978).

Limited literature looking at individual response to context

Recent studies show wide variation in the practices (content, pedagogy, evaluation) of different subject departments, both within schools and between schools, with consequent effects for students (O'Neill, 2000). These variations are responses by each department to their unique context, for example the mixture of student abilities, the strengths of current staff, school policies and community expectations. O'Neill (2000) considers that in order for research into HOD work to be useful it is necessary to look at the effect of context on the decisions made. Therefore analysis of a case study should focus on the rationale for the choices an individual HOD makes as they work through their unique set of issues and priorities.

My study contributes to the literature on HOD response to context

My case study contributes to this gap in the literature noted by O'Neill as I describe my context in rich detail, my response to this context of learning coaching/mentoring principles, and my rationale for my actions.

CHANGE LITERATURE

Change is now constant in NZ schools

Today change is no longer seen as an occasional process, rather change is the norm (Sauser & Sauser, 2002), the 'default setting'. Conditions will continue to change and we will need to keep learning in order to serve our students the best. During my 20 year teaching career continual change has been normal, however for several members of the department whose teaching careers began prior to *Tomorrow's Schools* (NZ Dept of Education, 1989), change used to be more

occasional. The continual change of the past two decades is something they comment on, and respond to differently.

Change is not a simple process

Leading my department to implement differentiation was not going to be a simple matter of providing readings about the idea, some exemplars of how to do it, and then assuming staff would begin to start creating tasks using this framework. Researchers report many factors that influence the change process; issues to do with workload, work-life balance, stress and self-efficacy (Argyris, 1999). There is considerable literature on acknowledging these issues and optimising staff response to change (Argyris, 1999; Kanter, 1988).

Minimising resistance to change

In preparing for a change, a HOD needs to recognise that a change that fits with her vision of the department in the future may not be a change for the better for all concerned. The HOD who is open to talk over the merits of current staff practices will meet with less resistance to change than one who issues a unilateral instruction to change or adopts a patronising manner about why the new ways are better (O'Mahoney & Matthews, 2005; Rosinski, 2003).

As change is implemented Kanter (1988) counsels keeping as many of the old practices as possible, to indicate the leader values staff's existing teaching methods and the department/school traditions. She gives a range of pragmatic reminders for leaders to give advance notice of expected change to help people prepare, to divide the change into small achievable steps, to give choice about implementation to help people feel engaged with the process, and to remember to acknowledge the extra work it takes staff to implement change.

After change has begun, staff are likely to lose heart about persisting with a change when they see little immediate effect on student behaviour and achievement. A change in teaching delivery is one aspect of the entire system of interactions in a school and the wide community. The inter-relationships

between all the parts of the system mean that you seldom see the effects of your actions immediately (Senge, 1990). Therefore in planning the implementation of change, it is important to have some 'low hanging fruit' (Sweeney, 2005); small changes with immediate positive results.

'Buy-in,' a strong personal agreement with a development, by staff is critical to deep and long lasting change (Fullan & Hargreaves, 1992) and professional development approaches will be more effective if they are designed to maximise this buy-in. Fullan and Hargreaves consider that experienced staff have frequently been recipients of change efforts that feel imposed on them by senior staff and do not acknowledge existing teacher beliefs as important, and are therefore very wary of similar efforts but are open to small-scale inquiries into their own practice. They suggest "making menus not mandates" (1992, p. 123) which give room for the discretionary judgement of staff to select and adapt aspects that will work in their context and their teaching style.

COACHING AND MENTORING LITERATURE

Introduction

The literature of coaching and mentoring in schools is described, with a focus on the similarities and differences between coaching and mentoring approaches. Key principles in mentoring include focusing mentees on development of good practice, and key principles in coaching include tailoring the coaching to the individual coachee.

Coaching and mentoring are an improvement on full-staff professional development

There is a variety of delivery methods used for teacher professional development. In my first years of teaching twenty years ago almost all

professional development was done in full-staff sessions. Stoll et al. (2003) oppose full-staff professional development, strongly asserting that the idea that 'one size fits all' is nonsense as it "fails to account for the uniqueness of individuals and context" (2003, p. 106). In New Zealand as in other countries, there is now an increased use of small group sessions, e.g. professional learning circles where staff work together on a topic of interest (Kise, 2006).

From meta-analysis of professional development research with positive outcomes for student performance (Timperley et al., 2007) comes a list of common features of effective teacher professional development which includes active engagement by teachers, a constructivist approach where staff have opportunity to align new knowledge with their existing knowledge, opportunity to rehearse strategies and individual support for implementation. Most of these features require at least small group settings and are better served by coaching/mentoring, as this provides one-on-one interaction towards these goals. One reason is that even in a small group, unless there are a variety of approaches to processing ideas many types of learners will not engage with the proposed change (Kise, 2006). Thus, though working one-on-one is highly costly in time, Kise asserts it remains the most effective way to effect deep change as it can cater for each person's learning needs and therefore they are more open to change.

Limited literature assessing effect of coaching/mentoring on student performance

There is limited literature in the educational coaching/mentoring field (Allan, 2007; O'Neill, 2000; Wright, 2002), in particular very little research reporting how coaching or mentoring has achieved "tangible and robust evidence of pupil or staff improvements in performance" (Allan, 2007, p. 13). For example in Timperley et al.'s (2007) meta-analysis of research studies in teacher professional development, they did a search specifically for research of mentoring teacher novices and found no studies documenting outcomes for students. This is in common with other research studies in education; meta-analyses of research

studies of effective teaching practices find very few studies the world over which fully document the impact of these practices on student achievement (Hattie, 2003a). Timperley et al. (2007) interpreted this situation as:

Professional development is usually about changing the knowledge, skills, beliefs, and attitudes of teachers without necessarily expecting these changes to have a direct or immediate impact on their students. Instead, the expectation is that cumulative experiences, rather than any specific experience, will result in more effective teaching. (2007, p. 19)

My research fits this pattern of focusing on changing my teacher practice with the expectation that this will have a gradual flow-on effect to staff and students.

In the following sections, after comparing coaching with mentoring, I briefly describe the role of mentoring as developing good practice in novices and then take more time to describe aspects of coaching. This is partly because the majority of my staff are already experienced teachers, and partly as the coaching literature offered many principles and approaches which I wished to trial in my work with staff.

Coaching compared with mentoring

In 2007 when my interest was piqued in using coaching/mentoring with staff, those staff speaking of this used the terms as if they were interchangeable. As I read texts about coaching and mentoring, each text concentrated on one or the other and had different emphases. I compared approaches as I wanted to note if one approach suited my context more than the other.

There is considerable overlap between the roles of a coach and a mentor. Coaches and mentors both work with individuals to achieve their goals, either in self-selected areas of development e.g. concepts of inquiry learning (Robertson, 2005), or perhaps building skills needed to satisfy external mandates (Kise, 2006) e.g. use of asTTle standardised reading tests. Mentoring generally has a broad personal development focus and coaching has a more narrow scope of improving

specific skills (O'Mahoney & Matthews, 2005; Pitton, 2006). Mentors are often more directive than coaches (Kay & Hinds, 2007), providing a menu of good options from which the mentee selects to achieve their goals, whereas coaches ask questions and enable coachees to discover for themselves what is right for them (Rosinski, 2003). I have attempted to apply elements of both coaching and mentoring principles in my interactions with staff.

MENTORING

Mentoring is valuable for both novices and experienced staff

Much of the literature on teacher mentoring concentrates on the induction of novices to the profession or perhaps new to a school (O'Mahoney & Matthews, 2005). However experienced staff may value mentor support in implementing new practices (Pitton, 2006). Therefore, though I had no novice staff at the time I commenced this literature review, mentoring literature was still relevant as I wanted to lead staff in the implementation of a new practice, that of differentiation, as elaborated in Chapter One.

The purpose of mentoring is development of good practice

The prevailing form of induction of new teachers, whether formally with a mentor, or with an informal buddy, concentrates on emotional support (Pitton, 2006). This position is gradually changing with many mentoring trainers strongly advocating for change. Their position is that teachers will form habits whether or not they have the help of a mentor, and therefore it's best to help the new staff member form good habits from the outset instead of knee-jerk reactions to job stresses (Achinstein & Athanases, 2006; Fullan & Hargreaves, 1992). Good mentoring moves considerably beyond emotional support and provision of sample lessons to helping staff developing effective practices and developing the teacher's ability to problem solve for themselves.

Good practice includes catering for student diversity

A recognised pattern of natural teacher development is movement from concentrating on their own actions ('Did you like the way I ...?'), to focusing on the class ('Do you think they got it?'), and then to focusing on individual student needs (Pitton, 2006). One role of the mentor is to accelerate the transition between these natural stages. Focusing the teacher on individual students is a means of helping them address the diversity in the classroom; e.g. who would benefit from this type of lesson, who would miss out? The mentor uses student work as evidence, supplemented by factual observations by the mentor, to help the teacher see an objective picture of what's happening and what needs work, e.g. to refute an assumption of particular students as often misbehaving (Achinstein, 2006).

Good practice is developed by development of reflection practices

A recent full staff conversation in my school showed a majority of teachers doing an informal debrief on their day alone or with colleagues. This informal reflection can be extended and developed by mentors to help teachers "make connections between what they already know and do and the idea they are introducing, helping novices become problem solvers who can monitor and adjust their teaching to support their students' learning" (Pitton, 2006, p. 2). Mentors are trained in questioning methods which enhance this development:

- "How did you come to that conclusion?" (O'Mahoney & Matthews, 2005, p. 95)
- "How does seating arrangement affect student behaviour issues?" (Helman, 2006, p. 73)
- "What does the students' work tell you?" (Pitton, 2006, p. 49)

The art of mentoring is varying the balance of advice and questioning

There is a continuing tension for mentors, an ongoing conversation inside their heads as they talk with mentees, balancing giving advice and developing mentees in reflection practices:

How do I phrase my comments and questions to help her grow in her own ability to problem-solve? There exists a tension between passing on the teaching knowledge gained through experience and promoting the autonomy, creativity, and self-reflection of the novice. (Helman, 2006, p. 69)

In the next section, I review coaching literature on individual professional development work with experienced staff.

COACHING

Introduction

Kise (2006) and Rosinski (2003) describe coaching as an art; a standard set of techniques will not produce the best coach, instead it's about identifying and developing a person's strengths, and using this information to select an effective approach in a given situation. I begin this section with an extended discussion of tailoring coaching to individual learning needs. This information is presented in more detail than the other literature as I found this approach valuable in my research. The coach also needs to build a basic repertoire of skills in working with a coachee. Coaching skills covered in this review are creating and working towards achieving specific goals (Robertson, 2005), the development of trust (Clutterbuck, 2007) and an awareness of cultural perspectives (Rosinski, 2003).

Tailoring coaching to meet individual staff learning preferences

Staff have different learning needs

Each person has different learning needs to be met before they begin to change; these vary with their natural learning preferences (Kise, 2006). Kise describes learning preferences as natural personality preferences about how people naturally prefer to take in information and make decisions. Coaches can tailor their work with individuals to meet those different learning needs. Sometimes those slow to embrace change are termed 'laggards,' or other terms which imply

staff are being deliberately negative in their response to any change efforts. Kise (2006) refutes this notion and gives many examples of a wide range of personalities responding openly to change once their learning needs have been met.

It is common procedure to assess coachee learning preferences, either by simply asking them about what they expect from a coach/ mentor or by using an indicator like the Myers-Briggs types, at the beginning of a coaching or mentoring relationship (Allen, 2007). Kay and Hinds (2007) suggest the coach/ mentor uses this information to modify their approach to suit the coachee/ mentee, whereas Rosinski (2003) uses a learning styles assessment to make coachees aware of how they perceive the world.

Neutral terms to describe different learning preferences

Kise (2006), an American professional coach working in education, wanted a neutral framework for staff to discuss their learning preferences free of value judgements about the relative values of each approach. Once a common, neutral, set of descriptors is established, the coach and coachee can use these descriptors to identify and discuss their teaching strengths and beliefs; perspectives, assumptions and foundations. Kise selected the Myers-Briggs (Myers-Briggs Foundation, 2009) description of personality types as suitable for this purpose with its established, rich set of descriptors.

Myers-Briggs description of personality characteristics

The Myers-Briggs Type Indicator is a tool to describe personality preferences, about how people naturally prefer to take in information and make decisions (Myers-Briggs Foundation, 2009). Developed sixty years ago, subject to extensive testing of validity and reliability by Myers and Briggs, and by many studies over these 60 years, this indicator has stood the test of time and is used by two million people annually. Myers and Briggs sought to make renowned Swiss psychiatrist Jung's theory of psychological types, published twenty years earlier, understandable and useful in people's lives. The essence of this theory is that the

huge variation in human behaviour actually fits quite orderly and consistent patterns, due to basic differences in the ways individuals prefer to use their perception and judgment (Kise, 2006; Myers-Briggs Foundation, 2009). Both of these attributes; perception - how people take in information; and judgment - how we make decisions, are key processes in education, thus an understanding of natural preferences will help a coach understand more about how the coachee is thinking and tailor their approach accordingly (Kise, 2006). These are natural, observable differences among people that influence how we coach and how we want to be coached.

The Myer-Briggs (Myers-Briggs Foundation, 2009) tool uses four pairs of characteristics to understand individual learning preferences: *Judging* (planning) or *Perceiving* (last-minute); *Judging* (practical applications) or *Intuition* (big picture); *Feeling* (people are the priority) or *Thinking* (logic is the priority); and *Extroversion* (refreshed by group work) or *Introversion* (learn alone). Each person has a combination of four preferences, one from each pair. To use the official Myers-Briggs tool for assessing individual preferences requires specific training (Myers-Briggs Foundation, 2009). Kise (2006) comments that she is simply using the broad principles of individual learning preferences. This caveat is likely to satisfy those who warn about the slavish use of tools which analyse student learning styles (McMillan, 2001).

Coaching staff with different learning preferences to the coach

Sometimes a coach may say “No wonder he doesn’t take my advice – he’s my exact opposite” (Kise, 2006, p. 139). However a coach needs to be able to work effectively with the full range of people in her team. A coach of one learning preference can modify their natural approach to cater for those staff with different learning needs (Kise, 2006). For instance, as a *Feeling* (people-focused) type when coaching a staff member who is a *Thinking* (logic-focused) type, I recognise my ideas are likely to be debated and I choose to give room for this debate rather than take it as a challenge to my wisdom or competence. Kise also describes the different types of support which people of different learning

preferences request from the coach; some want class-ready resources or background reading, others in-class support, and others a sounding-board to debate the value of a new approach.

Teachers have different teaching pedagogies

I had considered teaching pedagogy to be neutral, that teachers once aware of some good teaching principle would recognise its validity and begin to work towards catering for it e.g. novices may not have noted the importance of catering for the diversity of learners. However the situation is not nearly so clear. Kise (2006) gives a range of examples where teachers had very different emphases based on their beliefs about effective teaching, which she suggests developed from their own experiences and personalities. One example was a teacher who enjoyed dramatically reading aloud to his early primary school students, but this practice limited the rate of reading development of his students. Another teacher often had students making models as he considered these critical for developing understanding of science concepts, but unless the link between applications and the concepts is emphasised students may remember using a glue gun more clearly than principles about friction.

The coach gently uses information and evidence to lead staff to recognise “where their strengths and beliefs lock them into practices that limit their freedom to help students succeed” (Kise, 2006, p. 15). For instance a teacher’s method of delivery usually matches their own natural learning preferences. However if they only teach in that style they extend the students who are like them and disadvantage the rest. Kise gives many examples where teachers do not relate easily to students who are very different to themselves. Listening to other staff describe their learning preferences usually opens individual eyes to the alternatives that are present on staff and therefore are likely to be present in their classrooms.

Making these principles explicit empowers the coachee

If the coach makes the coaching process explicit this is empowering for the coachee. In addition to building their capacity to reflect on their teaching and trial their own solutions to their dilemmas, the teacher is able to use the coaching principles to continue to develop their practice without the support of the coach (Clutterbuck, 2007). When a coachee understands their individual natural learning preferences, it helps him/her to deal with some of the difficulties of change. For instance orderly (*Thinking*) types, when selecting a lesson with increased student choice, are aware of the stress they feel from assuming this choice will lead to chaos. Thus they come to that lesson aware of their likely reaction, and hopefully become less flustered during the lesson as they trial something outside their comfort zone (Kise, 2006).

In the following section I look at specific skills that a coach can use in working with staff of any learning preference; creating and working towards achieving specific goals (Robertson, 2005), the development of trust (Clutterbuck, 2007) and an awareness of cultural perspectives (Rosinski, 2003).

Specific goals give focus and a reference point

Specific goals give coach and coachee a reference point to assess progress (Robertson, 2005). If you're specific about your goal, e.g. try out this technique with Year 10 by the end of the week, then you'll be able to measure progress towards it. If your goal is vague, e.g. get better at catering for low learners, then amongst the daily demands of teaching, you are unlikely to make the time to deliberately focus on tasks that will progress you towards your goal. There are two common acronyms used to guide people in their selection of goals (Achinstein & Athanases, 2006; Kay & Hinds, 2007; Robertson, 2005) which avoid the trap of setting vague, woolly goals. GROW describes the process of creating Goals by looking at current Reality and possible Options and then What must follow in order to achieve these goals. From there, a coach can help a coachee create SMART goals which are Specific, Measurable, Achievable, Realistic and set a Time frame for achievement.

In-depth development requires openness and trust

When the coach models an openness to evaluate her own foundations, e.g. discussing whether her favourite teaching technique ignores the needs of a large section of her class, this helps the coachee build trust that the coach will not shoot down or over-ride the coachee's ideas (Clutterbuck, 2007). Therefore the coachee will become more direct and open with the coach, explaining their rationale for their practices, even if the rationale or the practice sound less than optimum teaching when teased out in conversation.

As trust is built, coaching conversations can begin to plumb depths of people's perspectives, assumptions and foundations. The questioning skills described in the Mentoring section, e.g. 'what did you hope would be achieved by this activity?', are valuable in coaches teasing out these assumptions and foundations. Such conversation requires each person to work on withholding judgement and seeking to understand the other's perspective (Clutterbuck, 2007). Clutterbuck considers the emotional courage, time and commitment this requires can be worth the effort as once people look at their assumptions and foundations they will realise they have made more assumptions than necessary about the constraints of the situation. Therefore they are open to change as they feel freed to think outside the square instead of being limited to minor variations in ways of working.

Mentors working with Lee (2006) acknowledged they did not want to jeopardise the relationship with the mentee and therefore they avoid addressing difficult issues, e.g. different expectations by the teacher for students of different ethnicity. Pitton (2006) and Lee both reinforce the necessity for coaches/mentors to be courageous and describe problems they observe in staff teaching practice. Scott (2002) acknowledges that most adults avoid such conversations and helps people prepare carefully how they will address difficult issues in conversation. She considers the depth of relationship that does develop between

people who have the courage to address difficult issues to be well worth the stress of those conversations.

Scott (2002) suggests the coach can sustain an atmosphere conducive to change, for example “the more emotionally laden the topic, the more need for restful silences as you wait for the person to gather their thoughts” (Scott, 2002, p. 223). The coach has a growing awareness of the dynamics of situation, e.g. people’s motivations for their aggressive responses, which helps her to respond with wisdom and patience instead of simple defensive gut-reactions if a coachee responds aggressively.

Understanding cultural perspectives enhances the coaching relationship

Our culture significantly affects our behaviour (Rosinski, 2003), and therefore an understanding of the differences in our cultural worldviews will enhance the coaching relationship. A person’s cultural orientation or worldview is the way a person perceives their world, encompassing perceptions of time, history, priorities, and ways of interacting with others (Rosinski, 2003).

The same words may mean different things to coach and coachee

When a coachee says ‘yes, I’ll try out your suggestion’ it may mean they’ll use the coach’s suggestion within the next fortnight, or it may be a statement made to avoid confrontation with the person in authority but they actually disagree about the usefulness of that suggestion and have no intention of trying it out. If these differences in meaning stay implicit they can become a source of misunderstanding and frustration between coach and coachee. As a coach becomes aware of those differences, they can make differences explicit so coach and coachee are not “talking past each other” (Metge & Kinloch, 1978); so people notice that words which mean one thing to them are interpreted differently by the listener due to their different cultural orientation/worldview.

Discussion of cultural norms clarifies how the other person is responding

Consideration of cultural orientation affects how coach and coachee interact and what advice is appropriate. In interacting together, one person may prefer to be explicit and direct in order to avoid misunderstanding but in some cultures communication is more implicit, preferring a person pick up the non-verbal clues, e.g. tone, to clarify their position (Rosinski, 2003). However each person will benefit from realising how others perceive their comments or actions; “when you interrupted me, this is how I felt” (p. 146). For example, in helping the coachee with their issues, a coach may say she/he was not straightforward enough when addressing poor behaviour in a student. Before the coach can help the coachee address his problem the coach needs to check how the coachee perceives the problem; was it a cultural orientation that speaking directly was not appropriate or a lack of experience in this skill?

Awareness of cultural norms helps draw out their richness

An awareness of another’s worldview helps the coach frame her approach to draw on the riches of that person (Rosinski, 2003); to notice the strengths of different cultural orientations rather than simply feel frustrated that the coachee doesn’t perceive the situation in the same way as the coach. For example a reluctance to give opinion in department meeting may not be simple individual idiosyncrasies but perhaps long standing cultural training about honouring those with experience or rank. The critical change is a mindset change in the coach herself; as she begins to see the myriad ways cultural diversity influences individual responses to different situations. A major caveat is an individual’s cultural orientation can vary significantly from national characteristics and therefore a coach should build an individual profile of each staff member, not assuming an individual will respond like others she knows from that cultural group.

CHAPTER 3: METHODOLOGY AND METHOD

Introduction

This chapter presents the background and rationale for the paradigm or methodology that guides this study and the approaches and methods that were used to collect data to address the research question. I give a chronological outline of the specific methods used in the study. Finally, the background and rationale for the data analysis methodology are described.

AN INTERPRETIVIST RESEARCH PARADIGM

Methodology is a broad term encompassing the framework for doing research and the ways a researcher asks and answers questions within that framework (Cohen et al., 2000). A paradigm (Kuhn, 1962) is a term for such a framework, as a paradigm describes the theories that form the foundation of the framework, the research questions that make sense within that framework, and the methods used to solve problems within the framework. Within any academic discipline, e.g. education or chemistry, researchers may work from different paradigms, and what constitutes a suitable experiment and the interpretations made of that data varies between paradigms. There are three broad paradigms; positivist, interpretivist and critical theory.

Positivist paradigm

A positivist paradigm has the researcher working in a highly objective manner, and managing variables, an approach that originates in classical science research (Cohen et al., 2000). Social sciences researchers, including those in education, initially mimicked the rigour they perceived in this paradigm but then found it too limiting (Creswell, 2003). For instance a scientific approach suggests it is possible, feasible and desirable to fix all variables but the one under study (Anderson et al., 2007). This would be difficult to achieve in the complex context

of this study given the myriad variables that need to be identified and accounted for in a school setting.

Positivist researchers anticipate using quantitative methods to gather data. In this study quantitative data is less suitable as it would be difficult to document coaching/mentoring using the types of quantitative data available e.g. student test scores would only be indirectly affected by my coaching work as there are myriad other intervening effects. My research question suits reporting detailed descriptions of the steps taken and the subsequent responses from participants and researcher. This descriptive data is part of a qualitative approach.

Within a positivist paradigm, the positivist researcher is expected to be an unobtrusive observer of an objective reality (Parsons & Brown, 2002). It would be difficult to study and report my research question using this positivist parameter, or limitation, as I wish to study and report on my own situation and what I have learnt through experience. In common with many other social science researchers, I am not able to follow my research interests within a positivist paradigm.

Interpretivist paradigm

The dominant paradigm for current social science research is the interpretivist (Cohen et al., 2000) because it assumes that any reality which involves people interacting is able to be interpreted in different ways according to the world view of those involved (Creswell, 2003). For instance two people may say an event will start on time at 2 pm, but implicit in their thinking are different values which alter the way they perceive 'on time.' One may have an expectation that the event will get underway when people have gathered, and the other may assume by 2:05 pm the ceremony will have begun, and they honour the people involved by being present at the stated time.

The interpretivist researcher attempts to understand the complexity of the scenario under study by learning how those involved perceive their world.

Researchers use methods like in-depth interviews that gather rich detail and present a picture for an audience to understand the world they're viewing. The audience make the decisions about the relevance of this picture to their own contexts (Creswell, 2003).

Critical theory paradigm

A critical theory paradigm seeks to empower marginalised and disempowered groups of society (Cohen et al., 2000). Research done within this paradigm incorporates the participants into the research process as much as possible, for instance ensuring they have a voice in the questions asked, the data gathering methods used, and the report created (Creswell, 2003). Creswell notes the research report does not form the end point of research, as in the positivist or interpretivist paradigms, rather there is an expectation of active intervention in the situations that have been researched in order that the final situation of the people is improved in some way.

There is a possible critical theory dimension to my research question as the students in my multicultural, low socio-economic school constitute one of the disempowered groups of New Zealand society (Bishop, 2007). Bishop describes the limited educational achievement of specific groups of New Zealand students, in particular low socio-economic groups, and Maori and Pacific students. The limited educational achievement of this group limits the future choices of these young adults to filling similar societal positions as their parents. He considers some of these reasons for this groups' limited educational achievement lie within the scope of the teacher to make changes, e.g. teachers' expectations of students. If my coaching/mentoring of my staff helps them consider changes to their practice which may benefit the achievement of our students, then this research has an emancipatory edge. However to use critical theory as a research paradigm assumes I directly involve those who need to benefit from the research, both students and department staff, in the research process (Creswell, 2003). To involve multiple stakeholders in this way would make the research

process more involved and take longer than the time and energy I have available to invest into it.

The case for interpretivism as the paradigm of best fit

I have selected the interpretivist paradigm to guide my study because it provides more scope for my research question than positivist or critical theory. The positivist paradigm expects the researcher to remain an objective observer of a research situation, whereas I wish to make interventions in my own work situation. The critical theory paradigm expects the researcher to actively incorporate research participants in the research process, and this requires more time and energy than I have available. Description of settings, interventions and responses are major sources of data for this research question and these descriptions are data which sits comfortably within an interpretivist paradigm. I wish to interpret my data in light of what I know of the staff involved and in light of the background I bring to the research, interpretivism allows and sets parameters for such interpretation.

ACTION RESEARCH USING A CASE STUDY APPROACH

Introduction

This section of the Methodology chapter introduces the research approaches and methods that can be encompassed within the interpretivist paradigm. Terms commonly associated with these approaches and methods are described to facilitate later discussion and justification of my chosen research approaches and methods.

Quantitative and qualitative methods

In contrast to the positivist paradigm which has its own set of methods, analysis and interpretation, the interpretivist paradigm uses a different set of methods, analysis and interpretation of analysis (Creswell, 2003).

The positivist paradigm generally uses quantitative methods; these involve a researcher collecting numerical data, using statistics to analyse their data, and

generalising from their data analysis to broader situations. Experiments and surveys are common methods of collecting data; averages, spreads and effect sizes are common methods of statistical analysis, and conclusions to the research make statements about how these results are likely to be found in the broader population from which the research sample was taken (Cohen et al., 2000). In contrast the interpretivist paradigm generally uses qualitative methods where the researcher collects descriptive data, collates the data, perhaps using codes and themes, and reports these in rich detail in order that a reader can choose for themselves how applicable the research is to their own setting. Case studies and narrative are examples of methods of data collecting (Creswell, 2003).

Some studies are mixed methods, meaning they use elements of both qualitative and quantitative approaches (Creswell, 2003). An example of an educational study using quantitative analysis is where Hattie (2003a) converted descriptive observational data about the characteristics of expert teachers into a numerical scale for statistical analysis of this data. An example of a mixed methods study would be where most of the data in an educational research study is descriptive suiting qualitative interpretive analysis, but some demographic data from that study may suit quantitative statistical analysis.

One feature distinguishing qualitative from quantitative methods is that during a qualitative methods study it is expected that the direction of the research will change as the research is in progress (Anderson et al., 2007). A researcher starts out with a general idea of the research problem. After gathering some data the researcher may decide to alter the methods of data collection, the participants, and/or the research problem. These changes are not due to weakness in the original design but represent an increasing awareness of the actual research setting, perhaps realising there is not time to interview as many people as initially planned. Researchers leave an 'audit trail' for the audience to document their progress and the rationale for those changes (Creswell, 2003).

The place of theory in quantitative and qualitative studies

Another distinguishing feature between quantitative and qualitative studies is the place of theory. In a quantitative study research often tests and extends the scope of an existing theory by testing its application in new settings. In contrast with qualitative studies, theory may be used to frame the questions and approaches used, as in ethnography (studies of culture) and advocacy research (empowering the group being researched). In other qualitative studies the researcher generates theory as they interpret their data, e.g. grounded theory creates and reports on layers of themes and inter-relationships between themes. Theory in this sense is an interpretation of the research setting and, in comparison to the place of theory in quantitative research, does not assert that its findings apply to a broad population (Creswell, 2005).

The role of the researcher in qualitative studies

In contrast to quantitative studies, where the researcher attempts to be an independent observer, in qualitative research there is no need for the researcher to attempt to prevent their own beliefs from influencing the questions, methods and findings of their research (Creswell, 2003). Personal background will always affect the choices a researcher makes; the 'glasses' they wear will affect what they see i.e. their worldview will affect how they notice particular data and how they interpret it (Clandinin & Connelly, 2000). Therefore the researcher makes explicit their relevant personal background, values and motives. The audience may then judge for themselves how these attributes have influenced the research findings.

Action research

Action research is broadly within the qualitative research framework, sharing the features described in the previous section, but it also has some distinct features (Anderson et al., 2007). The researcher is not an independent observer of a social setting, whose research is complete when the report is written. The purpose of action research is change; action researchers study the effects of their actions on their social setting (Parsons & Brown, 2002). The method used to

achieve this change is a cycle of reflection, action, reflection, action (Cohen et al., 2000).

In an action research framework, knowledge is generated through trialling real solutions to real problems (Anderson et al., 2007). It is similar to informal questioning of one's own practice but works in an intentional, systematic way that allows problem solving (Cohen et al., 2000). The rigour of the process allows the findings to be useful to a larger audience. Schön (1983) is a seminal author in this field with his advocacy of reflection in action as a legitimate source of knowledge. This contrasts with the general pattern of qualitative education research remaining studies done by academics on practitioners (those working in the particular research field, e.g. teachers or support staff). Action researchers point to the power imbalance of this relationship; in this way much action research has an emancipatory agenda in common with critical theorists (Anderson et al., 2007).

Action researchers have their own standards for rigour, slightly distinct from those of general qualitative methods. Validity within this framework concentrates on whether the research is likely to lead to a deeper understanding of the problem, and whether the problem has been framed and solved in a manner that includes revisiting underlying assumptions behind the problem definition (Anderson et al., 2007). The subjectivity of individual perspectives is addressed through incorporating triangulation wherever possible. The role of a critical friend, someone not involved in the research who can bring an outside perspective to the interpretation of data, helps address the effect of subjectivity on the data interpretation (Anderson et al., 2007).

Under the heading of action research, there is a wide range of studies from informal observations without any attempt to present this data to an external audience to highly formalised research projects (Anderson et al., 2007). Action researchers often start from the three classic forms of qualitative evidence; data

from observation, interview and documents. Evidence can include personal narrative and journaling data.

Case study

Qualitative studies vary in the size of the group studied and the means of selecting the group: a researcher may sample a group from a population, for instance a random selection of 100 Year 10 students from across New Zealand, or a group may be purposely selected e.g. all Year 10 students in a school near to the researcher (Cohen et al., 2000). A case study is a qualitative study focusing on individuals, or a very small group of individuals, and seeks to understand their perception of events (Cohen et al., 2000). This does not mean a case study is a simple illustration; case study data is gathered systematically and rigorously. Case studies report in rich, thick description that readers may share the lived experience of those studied to some degree, and decide the extent of the application of learning from this case study to their situations (Cohen et al., 2000; Creswell, 2003). Cohen et al. suggest case studies are often used as an exemplar of a principle, to demonstrate the lived reality of an idea.

When analysing data from a case study, a key issue is selection of information. Case study researchers need to be wary of selective reporting of data that supports a specific conclusion. However there is also no intrinsic strength in the frequency of particular data, instead a single comment may reflect a highly significant concept or insight or event (Cohen et al., 2000). When interpreting data, Cohen et al. suggest the theory derived from such low-level data will not be complex; it is false to strive to generate profound theories from case study data.

Within the case study genre there is considerable variety of approaches (Cohen et al., 2000). A researcher may be an independent observer of the group being studied or a participant. The focus may be on detailing the current actions or interactions of the individual or small group, or it may emphasise the links of present actions to their physical context or the links to the history of the participants. An example of the former emphasis is observing the ongoing

interaction between a pair of students of different ability levels working together. An example of emphasising the importance of physical context is studying the changes in student achievement when the student is moved into a different class. The latter emphasis, linking present action to history, is usually taken in a narrative approach, as elaborated in the following section.

Elements of narrative research

Narrative research is a form of qualitative research where the importance of a person's background is seen as critical to understanding their present actions (Creswell, 2005). A narrative researcher often researches an individual or a small set of individuals over a prolonged period, conducting observations and interviews. As the term indicates, narrative has some similarities to story telling as a narrative researcher often intertwines elements kept separate in other methodologies to make a seamless whole (Clandinin & Connelly, 2000). Thus some advantages of narrative research are the same as the strengths of storytelling; the rich detail enables the reader to get a strong sense of the setting and the lived experience of the research participants; it also helps the reader understand the responses of the participants as they read of their background and its influence on their choices.

Narrative is not simply the story of individuals or small sets of individuals, as in other research approaches the research is incomplete without the interpretation of data (Clandinin & Connelly, 2000). The critics of narrative note the lack of objectivity e.g. the researcher often incorporates elements of their own background and comments how this has influenced their selection of research material. However this transparency of researchers describing the influence of their background on the research actually increases confirmability of the research (Creswell, 2003) as elaborated in the section on Trustworthiness of data. The research is credible as research participants routinely check the data to confirm the researcher's report matches the participants' perceptions of their world.

TRUSTWORTHINESS IN INTERPRETIVISM

Methods of establishing trustworthiness

Trustworthiness in quantitative research has a similar meaning to the everyday use of the term (Cohen et al., 2000); would you be comfortable taking some of this research data and interpretation and quoting it as support for your own ideas or applying it to your own situation? If someone doubted the information would you be able to go back into the detail of the methods used and show that within an interpretivist paradigm these methods were rigorous and gave reason to trust the data arising from these methods?

In the same way that each paradigm has its own foundational principles and consequent set of questions that make sense within that paradigm, there are different criteria for assessing the results from research done within that paradigm. None of these criteria purport to check if the research results are true as this notion is too broad and too contentious, going beyond aspects of procedure into areas of belief (Creswell, 2003). Positivist research uses quantitative methods, and checks for the validity (is the research report a fair and legitimate representation of the situation investigated?); reliability (would similar results be obtained by others following similar methods?); and generalisability (are these results able to be applied to a range of other settings?) of information produced by research (Cohen et al., 2000). Cohen et al. describe the sampling procedure, selection of appropriate measuring instruments and statistical analysis as some key attributes considered in assessing these features of quantitative methods.

The qualitative methods used in interpretivist research do not attempt to satisfy the same set of requirements. Checks are still necessary to see if the information some one has laboured to produce is of benefit to anyone else. However the checks are about whether an audience would find the data and interpretation trustworthy. The term 'trustworthiness' is favoured over 'validity,' drawing attention to the criteria for trustworthiness in an interpretivist paradigm being

broader than those criteria used for validity in a positivist paradigm encompassing elements of reliability and fairness (Anderson et al., 2007). The features of trustworthiness are elaborated in the following section.

Triangulation

Triangulation is the most common approach to establishing trustworthiness (Creswell, 2003); using multiple researchers, multiple participants, multiple data gathering methods or multiple sampling episodes or sources (Anderson et al., 2007), and then looking for alignment and/ or convergence between these different sets of data. The more similarities between the variety of data sources, the more reason the reader has to find the research trustworthy.

Other common characteristics of quantitative methods which make the study trustworthy include asking if it is credible, confirmable, dependable, comparable and transferable.

Credibility

Credibility is whether the scenario described by the researcher matches the reality experienced by the participants, whether the researcher's interpretation are credible to those who provide the data (Creswell, 2003). Prolonged time in the field increases the likelihood of the researcher noticing the full picture. Participant checking verifies that what the researcher records matches their perception of their situation. Triangulation, the alignment of data from multiple data sources and/or multiple methods of data collection, adds to credibility (Cohen et al., 2000).

Confirmability

Confirmability measures how well the research findings are supported by the research data (Lincoln & Guba, 1985). Lincoln and Guba suggest an audit trail can be examined by a critical friend, an independent person with knowledge in the field, who checks the trail from original data, through interpretation stages to the research report. Transparency of data collection and analysis methods

increase the confirmability of the research; the rich detail recorded about these methods and the rationale for those choices confirm that personal biases, values and motives of the researcher have not unduly influenced the research findings (Creswell, 2003).

Dependability

Dependability is whether the scenarios/scenes/events recorded by the observer are the usual patterns in that situation (Cohen et al., 2000). For instance when students are not used to the presence of a researcher in the classroom they are likely to behave differently. The longer the researcher is in the field, the more likely it is that what she observes is the usual behaviour of those participants.

Comparability and transferability

Qualitative research is often highly situation specific, therefore the audience are the ones to decide if this research is applicable to their situation (Cohen et al., 2000). Ideally rich detail is recorded in each stage; the description of the research settings, methods of data collection and analysis, and the interpretations made of findings. This allows an audience to decide if the situation described has sufficient parallels to their own situation that it is appropriate to apply the patterns found in this research to their own situation.

ETHICAL ISSUES

All research studies have similar guiding principles about ethical conduct by the researcher (Cohen et al., 2000). The outworking of these principles varies according to the methods used, and also may direct what methods, types of data, and ways of reporting data are appropriate or not appropriate for a specific research setting. For instance a questionnaire to a specific group of well-known people would need to guard participant confidentiality far more carefully than a questionnaire to a random selection of students selected from a school roll.

The most important principle is to cause no harm to participants (Cohen et al., 2000). This includes clearly harmful physical or emotionally abusive experiments or interventions, but also includes issues that may escape a casual observer e.g. safeguarding the professional reputation of interviewees. In designing research, researchers need to anticipate ethical dilemmas and specify how the research design minimises these (Creswell, 2003). For example a questionnaire may ask about the levels of qualifications of students entering university without participants feeling emotional threat, but if the same questions were asked of long term unemployed people the participants could easily lose self-confidence. Wright's (2002) resolution to safeguarding her interviewees' reputations was by reporting their responses in the form of a fictional story with a hero whose characteristics incorporated elements from all participants.

Researchers are required to gain informed consent from participants (Creswell, 2003). The information provided to participants is generally as a written letter providing details about the nature of the study, its goals, and what will be required of the participants. The letter will give assurance of the ways the study is designed to minimise harm to participants, for example how their confidentiality will be maintained by the use of pseudonyms. Participants may withdraw from a study at any time with the assurance by the researcher that doing so will not be harmful e.g. to their job or their reputation.

In action research there are additional ethical dilemmas as the researcher is researching and reporting on their workplace (Cohen et al., 2000). The right to not participate in the study and to withdraw without harm is important, as students or staff may feel coerced to participate due to the teacher or senior manager's position of power over them. The confidentiality of findings is critical, for instance a researcher giving a report about the research to a staff meeting or to the principal will need to consider how much detail to include without exposing the participants to harm.

SELECTION OF RESEARCH METHODS

This section describes my selection of research methods from the variety of approaches described in the first part of this chapter, and then outlines the trustworthiness and ethical aspects of this specific research approach.

The first decision to be made was the selection of paradigm. The choice of interpretivism as the paradigm of best fit was elaborated earlier. Descriptive data of my setting, interventions and responses sit comfortably within an interpretivist paradigm. The interpretivist paradigm sets parameters for the interpretation of such data. Qualitative methods are used to carry out research within an interpretivist paradigm. This research is a qualitative study, rather than a quantitative or mixed methods study. The focus is on description of the experiences of the participants. There is no attempt to gather and analyse numerical data or to experiment on a sample of the population with expectation of generalising to the full population, as in quantitative studies.

A priority in the selection of my research question was the desire to make changes to my everyday practice. In most qualitative approaches, e.g. ethnographies, surveys, case studies, the focus is on data gathering and interpretation, and the research is completed once those stages have been written about. It would be quite normal for a practitioner, someone whose occupation is in the field of their research, to then make changes to their practice as an accepted flow-on consequence of doing research, but this is not part of the research itself. Whereas in action research, the research focus is working on real problems in a real setting, and the research method is a cycle of plan, intervene, reflect, plan, intervene... Working to change your own practice is an active part of the actual research. Therefore I selected an action research approach. My study fits within the action research approach in that it describes my current work situation, the intervention I am making of adding

coaching/mentoring to my usual practice, and the development of this intervention in light of my reading, reflection, action, reflection cycle (Creswell, 2003).

Action research in education may report interventions with large or small groups e.g. with several classes or with a single pupil. I have chosen to focus on my own interventions and reflections with six staff. This narrow focus and very small sample means this action research suits a case study approach. Case studies are routinely reported in rich detail and this matches my interest in reporting the details of my setting, interventions, and reflections. As a case study concerning my own practice, journal records of my own perceptions are a sufficient data source (Bell, personal communication, 2009).

Case studies are often lived examples of principles (Cohen et al., 2000). O'Neill (2000) asserts that context is critical to understanding Head of Department (HOD) actions, and that if the HOD's highly complex context is reported in rich detail, this will clarify the rationale for choices made by HODs. My case study is an exemplar of his principle as I describe my context in rich detail, my response to this context of using coaching / mentoring principles with staff, and my rationale for my actions.

I consider my background as well as my context to be important in understanding my interventions in this study. Narrative research emphasises the importance of context and background in understanding a person's decisions, thus I have added elements of narrative research to my writing. The narrative approach allows me to incorporate discussion of my background as I interpret my findings, rather than have this description sitting rather isolated in the introductory background.

In summary I am working from the interpretivist paradigm, using qualitative methods. My study is a case study of my action research, written using elements of narrative research.

Trustworthiness in this research

The critical component of establishing trustworthiness is the prolonged time I am spending in the field – this study is a record of my interactions in the workplace and reports on twelve months of field work. This prolonged field work gives dependability as it enables me to develop an in-depth understanding of the phenomenon. For example I have recorded multiple interchanges with each staff member, and these records are reflective of many more unrecorded similar interchanges. So though an individual record of an interaction with a staff member may have misinterpretations of their response to my intervention, the pattern across multiple recordings is more likely to match the reality experienced by the participants. This is an example of triangulation; alignment and/or convergence between multiple data recordings. I will also be looking for triangulation between the two methods of data collection; questionnaire responses from several staff members, and journal entries for many interactions with each staff member.

Participant checking adds credibility to the data. I originally planned to ask department members to read my records of their comments and affirm their accuracy. If staff affirm that those records sound like statements they are likely to have said, even if they don't remember the specific event, this confirmation adds to the credibility of my data. However I was not able to do this in the time I had available. Prolonged field work also gives the data to report to an audience in rich detail. The rich detail of my data gathering and processing methods provides an audit trail that shows the link between raw data and its interpretation, adding confirmability and credibility. The rich detail also allows

the audience to decide the degree of comparability and transferability into their own situation.

Ethical issues in this research

This research was designed to minimise harm to my participants; the staff in my department. A cause for ethical concern is the element of possible coercion to participate in the study. As their HOD I have a position of power over them, thus they may find it hard to trust assurances of no negative consequences to their job and their relationship with me if they do not participate in the research. This was addressed through questionnaires only being conducted with staff who left the school during 2008. I no longer had a relationship of power over these staff, and this minimised the element of coercion in their participation in the research.

Often questionnaires are anonymous and this reduces the stress to participants about the reaction of the researcher to what they wrote in the questionnaires, especially when the researcher has power over the participants. There was no attempt to make these questionnaires anonymous as I created individual questionnaires to gain feedback about the specific areas I had worked on with each staff member. Again the element of power was no longer in the relationship between myself and the participants and this minimised concern by the participants about my response to their answers, reducing the concern to the effect on our personal relationships with each other.

A researcher is acting ethically when they articulate the purpose of the study explicitly to the participants, and do not deceive them about how they intend to use the research data. Throughout the study I articulated the purpose of the study to staff as 'using coaching methods to improve how I work with you.' Informed consent was gained from participants through a letter covering the standard areas of description of the study, what would be required of

participants, the use of pseudonyms in any use of the data to ensure confidentiality, and the assurance of no harm for non-participation or withholding consent to use of information I recorded regarding interactions with them.

There are a limited number of science teachers in New Zealand; therefore I selected methods of reporting data to protect my staffs' professional reputations. As well as using pseudonyms in all descriptions of the school and the staff, I have refrained from using some data that would reveal personal detail that could identify the participant to science teacher colleagues who read this research. For example the questionnaires were very specific in order to elicit detailed responses from staff. Some of these details could identify the participants to colleagues and have therefore been generalised or omitted.

The questionnaires to staff included wording for some questions that could be perceived as harmful to the participants, but the inclusion of these questions was a deliberate decision that took into account the depth of relationship between myself and these long-standing colleagues. For instance 'Questions for Malcolm' includes the phrase 'try to stay positive when challenging him when very annoyed at his lack of proactive involvement in this development.' I made a deliberate decision to express my strong feelings about this aspect of our interactions as it was an important aspect of our professional relationship. I wanted his feedback in the interview on all aspects of our interactions including the more fraught ones. I do not consider it potentially harmful to Malcolm as he has repeatedly stated that he prefers me to be direct in my interactions with him. I have worked alongside him in the department for ten years.

DATA GATHERING

Introduction

Action research activities and specific data gathering methods used in this study are described in this section.

ACTION RESEARCH ACTIVITIES

Introduction

In this section I elaborate the activities taken as part of the action research cycle. As introduced in the Methodology section, practitioner action research extends informal questioning of practice to more intentional, systematic inquiry that lends itself to problem solving, and is deliberately begun in order to bring changes to the practitioner and their educational setting (Anderson et al., 2007). This is achieved through an ongoing series of cycles involving identifying and defining a problem, developing action steps as a way of improving the situation, implementing those action steps, and then evaluating the outcomes (Parsons & Brown, 2002).

Chronology of research background and activities

The following table lists my activities over several years, both the background for the research, and a summary of research activities. The activities described for 2008 are then elaborated in the following section.

2006	Fortnightly meetings: Angela taught me differentiation		
	Term 4: Attended 3 day conference on differentiation lead by Tomlinson		
2007	Weekly meetings: Angela and I worked together to teach staff concepts of differentiation		
	Full year: M. Ed. Development Study paper about my use of Tomlinson's differentiation		
2008	Term	Out of school	During the workday
	1	Reading coaching and mentoring	Staff required to write three tasks differentiated by curriculum levels Working with staff one-on-one fortnightly Recording interactions in journal
	Term 2	Reading research methods	Working with staff one-on-one fortnightly Recording interactions in journal Five weeks absence due to knee operation and recovery
	Term 3		Recording interactions in journal Staff required to write two tasks differentiated by curriculum levels Exit interview with Cameron Mentoring new staff member Andrew Increased teaching load
	Term 4	Reading theses	Recording interactions in journal Exit interviews Andrew, Malcolm, Margaret
2009	Analysis, synthesis, write report		

Being aware of the ideas from my reading as I worked routinely with staff

An action research approach allows for a variety of intervention-and-review cycles, some with more formal preparation and others, like my research, more ad hoc. For this research there were some additional meetings and interactions as outlined below, but generally I simply interacted with staff in a way that was informed by my reading, and recorded those interactions in my journal.

Three key principles from the coaching/mentoring literature which I sought to apply in my work are:

1. Tailoring my response to meet individual learning preferences (Kise, 2006).
2. Developing staff in problem solving/self-reflection instead of directly providing solutions (Pitton, 2006; Rosinski, 2003).
3. My focus is on guiding staff towards improving their practice, not on providing simple emotional support (O'Mahoney & Matthews, 2005).

Requiring staff to create three tasks differentiated by curriculum level

During Term 1 2008 I required staff to create three tasks for their Year 10 class's first topic for the year: a pre-test, an assignment, and to modify the existing common test assessment schedule into curriculum levels. I offered exemplars and my support to complete these requirements.

Weekly meetings with individual staff

I structured a weekly meeting with each staff member, these ran for Term 1 and early Term 2 2008. Initially I assisted them to complete the three required differentiated tasks I required of them. Once this meeting became routine, and by reminding them the day ahead, I hoped they would have this work at a stage where my help would be useful to them. Staff response to this varied. Three people added this meeting to their schedule but often requested ahead of time that I use that slot to help them with other priorities e.g. senior assessment moderation. After the first set of tasks were completed I did not set any further

differentiation requirements until Term 3, and we used the meeting time for whatever they wanted my help with.

This led to my changing my initial research focus from coaching /mentoring staff concerning differentiation to coaching / mentoring in all interactions with staff. The majority of my interactions with staff were about myriad other issues besides differentiation, and I wanted to note the effect my learning had on all interactions with staff. This practice of weekly meetings didn't continue for the remainder of the year, primarily due to physical time restraints: I was absent for an operation late Term 2, the focus of the start of Term 3 was catching up on work missed, and then in late Term 3 and early Term 4 my contact hours were increased to cater for a staff departure.

Advice coming from a differentiation mindset

In addition to the tasks and weekly meetings described above, which were additional requirements to my usual interactions with staff, my routine conversations with staff often included differentiation. As differentiation had become part of my pedagogy, my ordinary way of operating, any advice I was giving naturally included this. I also consciously included differentiation as I worked with individual staff on other matters, for example in a conversation on motivating reluctant students I might mention how such students had responded positively to a particular differentiated task I'd created.

Creating tasks available to others

For each Year 10 topic in 2008 I created an assignment and a worksheet differentiated by curriculum level, and saved these into the department shared computer files. I was hoping to lead by example. Ideally this practice created a resource bank for staff who lacked confidence to create tasks but wanted to trial more differentiated tasks. I spoke to staff in department meetings regularly about the availability of these differentiated tasks to use. It also added to the resources available for staff browsing the resources for an instant lesson, a new

idea, or something to cater for their lower level students. I felt like a mum filling the fridge with fruit to help gradually change a family's eating habits. My strategy here was based on noting the pattern of our staff using others' resources: a few years earlier the Resource Teacher of Learning and Behaviour had created worksheets for our Year 9 Food and digestion topic that were differentiated by ability level. At first staff made little use of these but I had noted increasing use of these worksheets over time.

DATA GATHERING METHODS

Journals

What events were recorded?

I recorded reflections on my routine interactions with staff, patterns that I had developed over several years, including:

- Coaching e.g. weekly debriefing about behaviour management issues
- Mentoring e.g. affirming effective use of AV resources
- Management e.g. working together to prepare material required for moderation
- Leadership e.g. staff meetings focusing on department priorities for the year
- Training e.g. helping a staff member learn to use computer functions

How was it recorded?

As soon as possible after a conversation with staff I wrote short phrases to remind me of main points. That evening I used these phrases to remind me of the conversation, and typed up a full account of the key parts of the conversation as closely to verbatim as I could, in order that the descriptions were as objective as possible. I deliberately did not take notes during the interactions in order that the staff response would be as authentic as possible.

My journal record of interactions with staff recorded descriptive and reflective aspects of these interactions in the same file. Immediately after writing the full

near-verbatim account, I would often add comments about implications for further action or elaborating how I felt about this situation.

Twelve months of journaling

I did not record notes after every interaction as this study concerns my daily work with staff over twelve months. I planned that if a department member makes comments that seem to indicate significant progress or encapsulate emerging themes, then I will certainly record those comments. Qualitative research is “emergent rather than tightly prefigured” (Creswell, 2003, p. 181). Therefore as themes emerge I will begin to take more notice of evidence supporting or opposing those themes (17 July 2008). I don’t remember any such ‘ah-ha’ moments. Themes only began to emerge during the re-reading of texts when writing the literature review, as I found myself thinking ‘yes, I found that in my interactions with staff.’ In Term 4 2008 my journal entries were repeating the same type of interactions with the same type of comments and reflections. It was releasing to know that I could see the natural break in data gathering and could move onto deliberate data processing.

Questionnaires

The key purpose of the questionnaire data was to add trustworthiness to the journal data by noting the degree of convergence between my record of daily interactions with staff and their description of interacting with me.

Intention to interview all staff modified to questionnaires from leaving staff

My initial plans, March 2008, were to conduct interviews with each staff member several times through the course of the study. However the likelihood of bias was too strong to consider interviews with current staff; it was very possible that staff response to my position of power as their HOD would skew any interview data, even if staff were unconscious of this. The Ethics Committee approved collecting questionnaire responses from staff who left over 2008 so the power issue was greatly reduced.

These staff responded to questionnaires which were specific to the interactions I had with each staff member. Staff had the choice of making a written, telephone or face-to-face response. Staff first described the ways I had worked with them, and gave feedback on which interactions from my list they found supportive and helpful and which interactions were not. For example, for Malcolm, from section one, the description:

'Describe the way I work with you about internal and external moderation of Bio,'
and then in section two, the rating:

'Please rate each of these as really useful/ slightly useful/not useful/ down-right unhelpful: Coaching •2007 internal moderation - after Malcolm had marked his assessments, getting him to explain his reasons for who had received which grade.'

I have chosen to set aside the data from both the ancillary staff member and the staff member who was with us one term in order to process the data in the time I have available for the study.

DATA ANALYSIS

Introduction

This section reviews the background and rationale for the data analysis methods used in this study. Initially I found the idea of theorising about my data daunting but my fears were allayed as I worked through the process I describe below (Creswell, 2003). In this action research study data analysis occurs throughout the data gathering as one episode of data gathering is reflected on and the following episode is modified in light of those findings (Creswell, 2005). Notes are often made immediately after the event with the full record written as soon as possible. Data is collected until there is a diminishing flow of new information gleaned from the data (Anderson et al., 2007).

Interpretation of the large quantities of data uses codes to identify important points from sections of data, and these form the basis for noting themes in the full data record (Creswell, 2005). Reporting this interpretation to an audience is an art of blending summary and quote, argument and evidence (Clandinin & Connelly, 2000).

Initially themes and theorising were daunting concepts

The idea of creating theory has felt an imposing aspect of this thesis. Reading others' theses showed the concept of creating theory is not as huge as my science training would imply, where a theory was a foundation underpinning and explaining a wide range of experiments, rather this is more about inter-relationships between themes (Bailey, 2004; Hume, 2006; Kelly, 1999; McArthur, 2007; Sutton, 2005; Wright, 2002). Another daunting concept was themes will naturally occur with reading and re-reading your raw data (Anderson et al., 2007; Creswell, 2003), however I soon found that themes began occurring to me as I wrote examples of my practice for the literature review (8 Aug 2009).

Data analysis is an iterative process integrated with rest of study

In qualitative studies the researcher cycles between data gathering, initial data analysis and tweaking the research questions in light of the initial data and analysis (Creswell, 2005). Though the process may be recorded as separate chapters in the final record, the reality is overlap and iteration between all three processes.

Standing back from your data, it is very normal for the research purpose to no longer seem as clear cut as it was prior to data gathering (Clandinin & Connelly, 2000). Action researchers are counselled to routinely revisit their research questions to see if the initial data gathering has "opened a layer underneath the

original question which more accurately reflects what it is you want to know” (Anderson et al., 2007, p. 212). My research question certainly changed form over the course of the study, and it was releasing to know the changes I made were ordinary practice within this research approach.

Raw data

Immediate recording

Action researchers often devise sophisticated recording charts but find these impractical to use in their busy classrooms. The reality is more often that researchers record a few key phrases which are elaborated as soon as possible after the event (Anderson et al., 2007). The record should be as factual as possible, using low-inference descriptors e.g. ‘Freddie was quiet for the rest of the period’, rather than ‘Freddie went off and sulked.’ Anderson et al. suggest low-inference descriptors make the record more objective, allowing researchers to interpret the situation at a later date, perhaps in the light of further data, without being influenced by what the researcher was assuming at the time. Clandinin and Connelly (2000) also note that the original record does not change over time, whereas a researcher may remember it differently due to data recorded in the interim, the facts are otherwise buried beneath perhaps interpretation or emotional response to the situation. A recording of the rich detail using low-inference descriptors also allows the audience to create their own interpretation of the scene, rather than only through the eyes of the researcher.

How much data do I need?

The test for stopping data collection is whether the popcorn has all popped; is there a diminishing flow of what seem like new insights, fewer interactions revealing new understanding of the participants and their perspectives? Once

the data feels like familiar territory revisited, its time to stop (Anderson et al., 2007).

Raw data must be interpreted

The interpreting aspect of the 'interpretivism' paradigm, used as basis for this study and most other educational research (Cohen et al., 2000), is that the researcher brings her own perspective to the data and consequently makes an interpretation different to another researcher or the participants or the audience (Creswell, 2005). Therefore it is important to make your relevant background explicit in order that the audience can assess whether your interpretation aligns sufficiently with their perspective for your findings to be of significance in their situation (Clandinin & Connelly, 2000).

There is a delicate balance between issues of voice; allowing the participants to speak for themselves, and making meaning of data (Clandinin & Connelly, 2000). Not all action research continues to the stage of interpreting findings for an audience (Cohen et al., 2000). Not all case studies involve interpretation, e.g. an oral history can be a simple record of a participant speaking, but to be a narrative inquiry requires elements of description and argument (Clandinin & Connelly, 2000). Clandinin and Connelly suggest researchers balance carefully the proportions of the data rendered in summaries, data given as selected richly detailed anecdotes which reflect a theme, or data given as arguments describing the interpretation given to an interaction.

Codes

The common way of beginning the search for pattern and meaning in the huge array of data is through coding. Researchers are counselled to read through all their data over a short period, looking for the meaning rather than the surface

features. This involves trying to “make the familiar strange” (Anderson et al., 2007, p. 160); viewing your own class as a stranger would in order to see what is usually implicit. Coding is a process of breaking the records into chunks, labelling a segment of text with a phrase or word from the participant which encapsulates a tone, a concept, or a perspective (Creswell, 2003).

Themes

The patterns that start to emerge from this immersion in the data are commonly called themes. Creswell (2005) suggests pausing after a few documents, clustering the initial topics into groups, looking for major topics, unique topics and what remains. Then take the new set of topics as you look at further records. Collapse groups into larger headings in order that you have perhaps five to seven major headings (Creswell, 2005). The final record should include multiple perspectives, supported by diverse quotations and specific evidence (Creswell, 2003), and should include any contrary evidence which disputes the theme. In a case study the sample is small, therefore the frequency of a theme occurring is not a determinant of whether the theme is significant (Cohen et al., 2000). A single comment may reflect a highly significant concept, insight or event.

Inter-relationships of themes

The final stage is looking at the inter-relationships between themes; where “you begin to match, contrast, and compare the patterns or constructs in the data in earnest” (Anderson et al., 2007, p. 215). The theory derived from low-level data, such as case study observations, will not be complex; it is false to strive to generate profound theories from case study data (Cohen et al., 2000). Charts and visuals may help communicate the patterns the researcher has noted to an audience. It is very common (Creswell, 2003) to present findings in a narrative with the discussion including a chronology of events, the detailed discussion of several themes with illustrations and multiple perspectives and/or a discussion

with interconnecting themes. Quotes directly from participants add richness, as do vivid detail, tension and contradictions, and analogies (Creswell, 2005).

Implications

The result of action research is generation of real knowledge through ongoing problem solving in actual settings (Anderson et al., 2007). Therefore beside the general abstraction described above, in action research a critical component of analysis is what were the lessons learned. This is a suitable stage to compare findings with the existing literature (Creswell, 2003). The researcher revisits their relevant background to make this learning explicit to the audience. In preparing the interpretation and implications, Clandinin and Connelly (2000) note the tension between a sense of voice; allowing the participants to speak for themselves, the 'signature'; the individual writing style of the researcher, and the audience; who will be reading this research and deciding what aspects of the research are pertinent to them.

CHAPTER 4: FINDINGS

Introduction

Three key principles from the coaching/mentoring literature which I sought to apply in my interactions with staff were:

1. Tailoring my response to staff in order to meet their individual learning preferences
2. Developing staff in problem solving/self-reflection instead of directly providing solutions
3. Guiding staff towards improving their practice, not on providing simple emotional support

This chapter focuses on the key themes that emerged from the data related to my coaching/mentoring of staff. The key themes were Learning Needs, which elaborates principle 1; and Working Strategically, which incorporates principles 2 and 3, although in some instances these themes overlap. I conclude this chapter by describing my progress over the course of this research.

LEARNING NEEDS

Introduction

Staff learning preferences are described using Myers-Briggs personality types. As described earlier, to administer the official Myers-Briggs tool requires specific training (Myers-Briggs Foundation, 2009), and for each staff member to complete the questionnaire. Kise (2006) comments that she is simply using the broad principles of individual learning preferences. My interest is also in the broad principles; how these concepts bring a new perspective for increased understanding of staff interactions. Thus I did not undertake Myer-Briggs training, nor did my staff complete a questionnaire. Instead my evaluation of staff preferences are informal reflections based on long-term working

relationships with these staff, with between three and ten years of working alongside each staff member in a small department. In May 2008, when I first read Kise (2006), I wrote extensive descriptions of each staff member's actions and habitual comments, and reflected on what these described perhaps indicated about their personality type. I revisited these reflections several times over the course of 2008 and 2009. I have supported these evaluations with journal records or questionnaire responses from the 2008 data gathering period. Where I am less confident in my perception of their personality type I have indicated this with a *perhaps* in the box for each staff member.

In the second section consideration of staff learning preferences is incorporated in my interactions with staff: matching support to my staff's preferences, letting staff bear the consequences of their preferences, responses based on close knowledge of staff strengths and weaknesses, tailoring my response to draw the best from each staff member, and big picture thinking.

Staff learning preferences

My own preferences

<i>Introversion</i>	(prefer to learn alone)
<i>Intuition</i>	(big picture thinking, creative, flexible)
<i>Feeling</i>	(subjective, people are priority)
<i>Judging</i>	('early starters', planning their work)

My personality characteristics can be seen in my approach to this Masters study. I have worked online instead of in a post-graduate class situation, which supports

the suggestion of an *Introversion* (learning alone) preference. For this research I have a routine of working Wednesday evening and Saturday morning every week for the two years. This steady work habit aligns with a *Judging*, planning, preference.

Kise's book impacted me strongly, and on reflection this could be interpreted in light of my *Intuition* preference enjoying how the concepts of personality characteristics gave a big picture understanding to the detail of interactions with staff. Also it impacted the pastoral interest I have in drawing the best from staff:

This is why I am thriving on this book – the *Feeler* in me loves how I can understand where people are coming from and how to help them! (5 May 2008)

Cameron

<i>Introversion</i>	(prefer to learn alone)
<i>Sensing</i>	(linear, concrete, practical application)
<i>Feeling</i>	(subjective, people are priority)
<i>(Perhaps)</i>	<i>Judging</i> ('early starters', planning their work)

Cameron's *Judging* preference is seen in his willingness to use my exemplars. His *Judging* preference is also seen in the following data record:

Oh, good, yes, it is nuts to spend three to four hours preparing for a one hour lesson (visible relief on his face) (22 July 2008).

The corresponding *Intuition* preference focuses on the 'big picture' view of how the implementation will be of benefit to students in the long term, whereas Cameron's *Judging* preference means he focuses on the immediate work involved. Cameron's *Feeling* preference is seen in his questionnaire response which focuses on my manner towards him, rather than the actions I take:

60 FINDINGS

Describe the way I generally work with you

Generally patient, non-judgemental and approachable. (9 Oct 2008)

Cameron discussed his final weeks before moving to a new teaching position:

He said he'd gathered enough animations to base his final weeks' lessons on. (31 July 2008)

Gathering enough animations for several weeks reflects Cameron's *Judging* preference as he is planning ahead. In the following example, clarifying a task immediately is also an indication of a *Judging* preference.

He sat down with me during that first hour and clarified what he could do. I helped him tease out Level 3 and 5 variations of the experiment, and then he was happy to create Level 4 as intermediate between these. (16 Aug 2008)

James

(Perhaps) Introversion (prefer to learn alone)

Sensing (linear, concrete, practical applications)

Feeling (subjective, people are the priority)

Perceiving ('last minute', leaving issues open)

James works independently and then brings the work to me for confirmation of his decisions, this reflects his *Introversion* preference:

He came to ask about a new unit std for 11SCP, showing me a Unit Standard he'd printed. (31 July 2009)

James likes concrete examples of principles, this reflects a *Judging* preference. When James leaves professional development sessions he frequently comments that the session wasn't any use as it didn't send people away with practical applications for immediate use. James' *Feeling* preference is seen in his conversations about his home life, his consideration of my workload, and in seeking affirmation:

The first day after holidays, his first topic is how am I, then we talk about his holidays. (21 July 2008)

Kathy: When suits this week to work on that task?

James: I'll do it, I don't want to stop your study. Masters, eh? (14 Oct 2008)

James walking in the corridor with me: Did you notice I'd cleaned up [my back room]? (13 Oct 2008)

James has a *Perceiving* preference, leaving modifying assessment tasks until the last minute:

James, who recently said (Dec 2007) when I was frustrated with his incomplete task 'Shout at me next time.' (2 Feb 2008)

Malcolm

Introversion (prefer to learn alone)

Sensing (linear, concrete, practical applications)

Feeling (subjective, people are the priority)

(Perhaps) Perceiving ('last minute', leaving issues open)

Malcolm's comments about the importance of our relationship as critical in getting the best from him shows his *Feeling* preference:

Malcolm: [The principal] asked me 'how is my relationship with Kathy?' I said we had a great relationship. I think you work hard, and she knows how to get the best from me.

Kathy: Yeah, you drive me nuts sometimes not doing some things, but I'm not going to let that damage our relationship.

Malcolm: Yeah, and you're like that with Margaret too - you get the best from her, because you treat us well, relate one-to-one.

(31 Oct 2008)

Malcolm's questionnaire data supported his unsolicited comment above. He described each of the statements about mentoring, which focused on building relationships, as 'Excellent' and each statement from the other three questionnaire sections; coaching, managing and leadership, as 'Good' (3 Jan 2009). Two examples of statements about relationships are 'affirming Malcolm about the relevance of project work and science stories for [extension] classes,' and 'supportive of Malcolm's coping with stress including concern about [family member's] health.'

When I required everyone to create a levels assignment ready for other staff to use in 6 weeks time,

Malcolm - wrote it up by hand at the last minute. (16 Aug 2008)

This action reflects Malcolm's *Perceiving* preference.

Stephen

<i>Extraversion</i>	(refreshed by group work)
<i>Sensing</i>	(linear, concrete, practical applications)
<i>Feeling</i>	(subjective, people are the priority)
<i>Judging</i>	('early starters', planning their work)

In a department meeting, I asked how people were feeling about differentiating by curriculum levels, and Stephen asked for feedback from other staff:

Stephen: I was doing boiling points, and good kids did multiple trials and good graphs, and I went to some groups and told them to just try this part of the graph. Is that levels?

James, Tamara: Yes

Stephen: But I haven't written it up as tasks. Is that okay?

(22 July 2008)

Stephen's *Extraversion* preference is seen in his working together with others, and his *Feeling* preference is reflected in seeking their affirmation for his actions. When I required everyone to create an assignment in Term Three, differentiated by curriculum level, ready for other staff to use in six weeks time,

Stephen - immediately got my help to modify an existing task into levels.

(16 Aug 2008)

Stephen displays an *Extraversion* preference by working together with me to complete the task. By completing the task promptly, he displays a *Judging* preference.

Tamara

<i>Introversion</i>	(prefer to learn alone)
<i>Sensing</i>	(linear, concrete, practical applications)
<i>Thinking</i>	(objective, logic is the priority)
<i>Judging</i>	('early starters', planning their work)

During Term Three I required everyone to create an assignment, differentiated by curriculum level, ready for other staff to use in six weeks time. I provided an exemplar research task.

Tamara - immediately showed me how she had taken my exemplar on elements, used it as a template and created a formative Year 9 metals research task, and a formative volcano task. She wanted feedback and I worked with her to tweak this. (16 Aug 2008)

Tamara completed the task promptly; this is evidence of a *Judging* preference. She worked alone on the task, bringing it to me for confirmation; this is a characteristic of *Introversion*. She used the exemplar I provided, those with a *Judging* preference readily welcome exemplars.

In a department meeting deciding how to process curriculum level data we had gathered from students, Tamara commented that "no one else has this much work" (16 Feb 2008). This comment reflects her *Judging* preference as she is diligent to comply with all requirements, but also her *Judging* preference where the work involved in implementation of a new approach is noted, in contrast to the corresponding *Intuition* preference which focuses on the 'big picture' view of how the implementation will benefit students in the long term. Her comment also indicates a *Thinking* preference, as those with this preference often challenge decisions.

Consideration of staff learning preferences is incorporated in my interactions with staff

Matching support to my staff's preferences

I consider that my staff share a *Sensing* preference, as they look for practical applications and linear approaches, whereas I have a very flexible approach which aligns with an *Intuition* preference. Thus my initial task exemplars were very different to my staffs' usual teaching methods, and I attempted to create further exemplars which were closer to their usual methods to increase the chances of staff using the exemplars.

The SCT pointed out that I embellish my assignments with so many variations that I needed to simplify to help others who wanted a concrete, linear structure. I've been working with the SCT on templates to help staff develop multiple level resources. We were finding they needed that level of support, together with my exemplars, to give them confidence to tackle development on their own/ alongside me. (5 May 2008)

Letting staff bear the consequences of their preferences

I chose to let staff bear the consequences of their learning preferences, for instance James' learning preference for *Perceiving* (last-minute preparation). In the following interaction I did not rescue him; I simply ensured the students were not disadvantaged by his actions:

Margaret told him the [senior equipment] would take months to arrive. He had ordered them through her two weeks ago. Last week he had been out of the classroom [due to other school responsibilities].

James: Oh, the assessment is next week

Kathy: Why don't you borrow from somewhere? How about [School A], as I have connections with Susan? Would you be able to ring them today?

James: Perhaps I'll do that. The kids have been sharing. Maybe I could move the assessment into exam week.

Kathy: Sure. Or take several days about the assessment. (30 May 2008)

Responses based on close knowledge of staff strengths and weaknesses

Sometimes I chose my response to staff based on my knowledge of their recurrent stressors. In the following journal record, my response was to Cameron was chosen knowing his ongoing stress about finding a balance between workload and private life.

He brought up that he finished his [course] he'd done this year and he was just investigating [further study]. I said that I feel that his evening course time this year had really contributed to his stress. (I didn't bring up that I felt that last year his teaching a night class had also contributed significantly and I'd talked to him about sustainable workload last year and this year directly in context of 'he's chosen to add this outside of school but needs to not let it impact the students and his teaching'. He talked occasionally this year about how tired he was the day after his evening session.)

He reacted in [his usual strongly emotional] way; sort of aggressive-defensive of 'I'm allowed a life beyond the classroom' by saying he needed to be able to doing things he wanted to do out of hours. Then he said he thought he'd sorted out how to manage the workload better by this stage of the year.

I then [responded] softly, softly with exemplar rather than direct advice or correction - I brought up my conversation with two other staff who are doing [part-time study] currently and that we talked about how to manage workload. He responded by saying yes, it would be way harder to

manage with children, and that he wanted to do this before having children. (6 Oct 2008)

Tailoring my response to draw the best from each staff member

By the end of the 2008 data gathering period, I was making deliberate decisions during interactions which I felt would draw the best from each staff member. There were many decisions made during the following interaction to draw on James' strengths and to give him room to work in ways that suited him, as long as those characteristics weren't limiting others' teaching.

James' got plenty of good ideas and experience, I just want to add my two cents worth and help him get stuff finished ready for others' use. He is welcome to stress himself when it only affects him e.g. getting his reports finished this week.

Kathy: I was thinking about an A3 format with boxes to fill in. I was wanting to emphasise the similarity of each bit, and A3 they have it all in front of them.

James: Oh, yeah. You wanted to use Botox as an example. And he went to get a copy [of a related assessment] from his reference box. There wasn't one, so he printed that and I collected it whilst he gave feedback to one of the students who was waiting for a response.

He wrote on my [first version of the student task], changing 'objective' to 'purpose'.

Kathy: Are they going to get 'purpose'? What about 'what was the point?' in brackets?

James: They get purpose; 'he did it on purpose, mister' He started typing the changes into his original task.

Kathy: Goal, goal's better, they know goal, we've been talking about it heaps [with subject choices and career thoughts]

He changed it without comment [body language - neutral response; oh, yeah, whatever, maybe its better - that's his usual - laid back]. We looked at the difference between his requirements and mine in our original task versions.

James: Yours is like a marking schedule

So he changed it to 'you must have...' and 'you could include...e.g. name of crew'. This time it was my turn to have neutral response - no biggie, room for him to have his style there, and his kids had already been working on this for some time so they'd probably fuss otherwise. He began to paste the task material into the other sections.

James: Its 3:10, we need to go and be outside watching now' [as a follow up for a lunchtime fight between two students he deans [has pastoral responsibility for] so we went outside for 10 minutes. I went back into his room and completed pasting the tasks. He came in after a few minutes and stood beside me. I wanted to ensure I'd helped get the task to completion right then - Tamara wanted it for Monday and I knew that as soon as James started to think about other things, other priorities could easily overwhelm getting this completed, e.g. family, dean stuff, soccer!, I could also see that I was faster to type/format than him.

James: We could do a picture next time

That made me put one in, as it's a quick process for me. I sent it to print.

James: I'm going down [to the photocopier] now.

Later I went down to the photocopy room with other printing. James's printouts were sitting there. He wasn't around so I told Irene I'd taken his stuff and left it on Tamara's desk on my way back to my classroom.

Otherwise Tamara may have the kids first thing and not know whether James had the task ready (particularly after the family celebration on the weekend, I would like to minimise her effort needed on Monday), and James may not think of Tamara first thing on Monday, again because of other priorities; family and deaning [pastoral responsibilities]. It was

quicker and more certain to complete the task myself, without almost any more effort. I left James a note that I'd done that. (17 Oct 2008)

Big picture thinking

The application of Myers-Briggs personality preferences to understanding interactions with staff brought new light to several questions I had mulled over for several years, including the idea of 'big picture' thinking:

Tamara: No one else has to do this amount of work

Kathy: Social Studies are doing skills in levels. Katie [outside provider] is ready to help us do skills in levels. 2/3 are failing the tests set at level 5, my aim with levels for this year is to show kids 'you've made progress' and for us to get benchmarks of where the levels are in a topic, so we can get an idea of how to help the kids to move a level.

Tamara: It feels like [the principal] is always getting us to do development before other schools, e.g. ABA [Achievement Based Assessment, with explicit criteria], and then it doesn't last.

Kathy: In my old school we did ABA for about five years, and then it seemed a natural progression to US [Unit Standard national assessments] and then AS [Achievement Standard national assessments]. So unlike those schools who hadn't moved, the transition to AS was far easier. (16 Feb 2008)

In January 2009, in reflecting on the Feb 2008 journal record, I wrote:

Shows no big picture view, just implementer of others' wishes. Look, my responses are big picture to her. [Feels] others don't consider the amount of effort and time implementation requires, particularly when it feels like a fad that passes.

WORKING STRATEGICALLY

Introduction

This section firstly describes my incorporation of Principles 2 and 3 from the coaching/mentoring literature: Principle 2, *Developing staff in problem solving/self-reflection instead of directly providing solutions*, is seen in extracts concerning developing staff in problem solving and self-reflection, and selecting the best response whilst engaged in a conversation. Principle 3, *Guiding staff towards improving their practice, not on providing simple emotional support*, underlies extracts about 'thinking about purposeful interactions,' coaching to implement differentiation, and limited openness of experienced staff.

Following this section, other major aspects of working strategically included keeping to my priorities for development in the face of external and internal demands, and considering how to work with experienced staff who may have limited openness to change. These minor themes combine tidily with my attempts to incorporate the Principles 2 and 3 described above, as their common element is reflecting on and modifying my approach in order to draw the best from staff. The action research approach used in this study iterates through cycles of action, reflection, modification, and then further action. I routinely reflect on my practice, but during this study I consider the increased amount of reflection on my practice had lead to my working more strategically than usual. Thus, though the theme of Working Strategically encompasses a broader scope than the original research question, during the coding process it emerged as a strong element of this research study. The common link with the Learning Needs theme remains tailoring my approach to draw the best from staff.

Consideration of Principles 2 and 3 in my interactions with staff

Developing staff in problem solving and self-reflection

Early in the data gathering period I began incorporating questioning techniques from mentoring literature to train staff in self-reflection:

It's starting to go in! Today I noticed myself in my conversation with Cameron trying to phrase things to draw the ideas from him instead of simply give advice. "How could you... in order to ...?" That's what I'd been taking notes from Achinstein the night before about. (11 March 2008)

Selecting the best response whilst engaged in a conversation

I looked for opportunity during conversations about routine matters, for instance discussing preparation of student progress reports, to use coaching principles/ techniques to improve how I was interacting with the staff member.

I am listening and watching my own interactions, thinking about how to input reflection on practice in the simple admin aspects. (5 May 2008)

Coaching to implement differentiation

I looked for opportunity to bring in elements of differentiation into conversations about other matters:

Cameron said he'd gathered enough animations to base his final weeks' lessons on. I said yes, now that you're organised like that you can respond flexibly according to student reaction to the visuals. Yes, he says, some students don't get it but some students get it far better using visuals. (31 July 2008)

In working with staff to create differentiated tasks, I provided sufficient structure for staff to continue unassisted:

Cameron sat down with me during that first hour and clarified what he could do. He had a clear idea of an experiment but no idea of how to vary it according to understanding. I helped him tease out Level 3 and 5 variations of presentation of the experiment and questions before and

after the task, and then he was happy to create Level 4 as intermediate between these. (16 Aug 2008)

'Thinking about purposeful interactions'

Occasionally I planned carefully how I would interact with staff. For instance in preparing for the arrival of Andrew, an experienced teacher but new to New Zealand teaching, I revisited mentoring literature notes in order to purposefully select my approaches before my interactions became simply reacting to daily demands e.g. report timelines.

First thoughts:

1. Beware micro-management, Kathy! Kiwi men certainly seem to thrive on being trusted to do a task well, rather than being helped through everything.
2. I need to provide frameworks - timelines for topics, resources - text and worksheets, computer access, soft copies of tasks, curriculum/schemes,
3. As he is new to NZ teaching, give approximate expectation of number of practicals/demonstrations per week, ratio of present/explain/practice, ratio of talk/use text/ use worksheets

From my readings:

[Achinstein & Athanases] talked of focusing on creating a good learning climate, rather than on responding to behaviour. They used questions about 'how does this activity cater for diversity?' Research and my experience remind me that behaviour management is minimised when learning is accessible and relevant.

I need to think about the cultural differences. I don't know what he (Andrew) might be keeping inside rather than mentioning. I think it would be best to start with being explicit about how I want to work with him - to

learn how he thinks and adjusting my interaction to draw the best from him according to his learning style and cultural approach. (16 Aug 2008)

Limited openness of experienced staff

I found the more experienced staff less open to direct discussion about their practices. In Malcolm's questionnaire responses, he voices appreciation of being trusted to do his job, but does not recognise my work getting staff to development differentiated tasks as challenging him to develop his pedagogy:

Describe the way I generally work with you

Malcolm: You knew I was experienced and left me to get on with getting the best from the kids, getting the info across, covering it in the right depth.

Can you give an example of ways I work with you that challenge you to develop your abilities as a teacher

Malcolm: Don't know, as I challenge myself to do that. (3 Jan 2009)

In contrast Cameron's questionnaire responses reflected his openness as a developing teacher to discussing his practice:

Describe the way I generally work with you

Cameron: Generally patient, non-judgemental and approachable

Describe the ways I work with you that seem targeted to develop you as a competent teacher

Cameron: Becoming insistent/ assertive when I needed a push, taking time to target particular areas for improvement

Can you give an example of ways I work with you that help you feel supported?

Cameron: Setting a time to discuss clearly what was going on

Can you give an example of ways I work with you that help you develop your confidence in your own abilities as a teacher?

Cameron: Pointing out the positive observable skills e.g. experiments, guiding development of weaker/slower developing skills e.g. relationships with 'difficult' students, never undermined self-confidence. (9 Oct 2008)

Later in the questionnaire, I ask for feedback on how useful staff found each way I worked with them, including the requirement to create tasks differentiated by curriculum level. Malcolm describes these steps as 'good,' but as noted in the following question, not all was smooth sailing:

- *2008 curriculum levels -*
 - *requiring Malcolm to prepare a pre-test for Year 9 and Year 10,*
 - *and to modify the test answer schedule into curriculum levels,*
 - *and to modify Malcolm's existing assignment into levels ready for others to use*
 - *offering to work beside Malcolm to complete the answer schedule*

Malcolm: Good, only thing wrong is pressure of time, there's so much to get done.

- *Affirm Malcolm when he got involved in differentiation/ curriculum level development, challenge him when he didn't about the benefits for his students, try to stay positive when challenging him when very annoyed at his lack of proactive involvement in this development.*

Malcolm: Fair enough. (9 Oct 2008)

Moderating other demands and priorities, and consideration of limited openness to change

The context for using coaching/mentoring approaches in working with staff was to lead them in the implementation of differentiation. In moderating other demands and priorities I consider I was acting as a 'leader of learning,' rather

than as a coach/mentor. The role of a HOD is complex and multi-faceted (O'Neill, 2000; Wright, 2002), and as a 'leader of learning' these decisions helped preserve the focus on implementation of differentiation. Then by judicious selection of my requirements of staff, I hoped to create conditions which increased staff implementation of differentiation. Once these conditions were created I could work alongside staff in the coach/mentor role.

Moderating external demands on staff

Several times I continued development of differentiation by curriculum level in face of competing external demands. For example, external curriculum support providers were contracted to work alongside HODs preparing staff for the changes in the incoming New Zealand curriculum, however as I said to staff:

Katie [outside provider] thinks she's coming to school to work with us. I want to say to Wendy [senior management] I don't think we've got curriculum levels nailed/ digested yet. I'm happy to talk with Katie and use her as a sounding board for new curriculum, but I want us to use the scheduled [Professional Development] faculty time to work on creating levels tasks. (22 July 2008)

In the second example of moderating external demands, following full-staff professional development sessions about success criteria (assessing achievement of lesson goals), we had a block of time during the weekly professional development time to work in departments. Other departments reviewed the rationale and process for success criteria, whereas my department used most of the time creating tasks differentiated by curriculum level which outlined explicit success criteria for students. Tamara commented with approval on my decision, contrasting it with other departments working on "vague, woolly stuff" (26 Aug 2008). In appraisal meetings Wendy, my line manager on the SMT, questioned me on my rationale for my action, and "I think she's satisfied that I have a plan and a bigger picture in mind" (3 Oct 2008).

Keeping to development priorities when these differ from staff priorities

There were not only external demands competing with development of differentiation; staff also had their own priorities. Early in the year staff were looking at Year 9 pre-test data, which showed student knowledge of the topic prior to teaching, and deciding a system for recording the rich detail of the information. Tamara commented that “no one else has to do this amount of work.” I responded by acknowledging other departments’ efforts and restating the rationale and goals for the implementation of differentiation:

Social Studies are doing skills in levels. Katie [outside provider] is ready to help us do skills in levels. 2/3 are failing the tests set at level 5, my aim with levels for this year is to show kids ‘you’ve made progress’ and for us to get benchmarks of where the levels are in a topic, so we can get an idea of how to help the kids to move a level. (16 Feb 2008)

Reflecting on buy-in

In order to create buy-in from staff, I chose to focus on areas where staff needs aligned with my goals for the department,

What would happen if I let everyone contribute to our dept direction for the year?

Well, essentially that’s what I think I did early 2008 by listening to Stephen and Tamara saying ‘there’s lots of year 9 who can’t cope with our resources.’

I did the McGuinness book [drawing the best from people] thing of ‘if they’re going anywhere near your destination, get on their bandwagon.’ My priority was differentiation, and curriculum levels as the manifest face

of that, so developing Level 2/3 work suited me just fine. There was perceived need, therefore there would be immediate buy-in. (8 Jan 2009)

Not all staff bought into the implementation of differentiation:

I've been distributing to Malcolm the levels tasks I and Tamara have created. I know his priority is his [senior class]. I wonder if distributing the work others are doing is having any effect - Does he think of it like junk mail - discarded with thinking, or glanced at to see if anything catches the interest, or door to door salesmen - a modicum of politeness and then discard the material once they've gone? I'd like it to gradually pique his interest and prick his conscience. (20 Sept 2008)

'Undiscussables'

I chose to concentrate conversations with staff on their areas of openness or areas of strength, rather than discuss their areas of weakness:

Exit interviews: There were certainly 'elephants in the room.' Does this matter? What was unstated in my exit interviews of Malcolm, Cameron were the things I thought they did really poorly. I did choose to skate near these things with a couple of statements in each list. I felt these at least touched the elephant's toes. I brought up difficult situations, and phrased it in a way to keep their mana intact. (9 Jan 2009)

An example from the questionnaires that brought up those difficult situations was: "practicing appropriate language for recording [student misbehaviour] on [computer system]/communicating to SMT & deans about behaviour management issues." (9 Oct 2008)

How much progress have I made?

Before starting this study I summarised my interaction with staff as encouraging individuals in order to draw out their best:

I think I've worked out how to draw the best from each through specific encouragement, except for James, who recently said when I was frustrated with his incomplete task 'Shout at me next time'. I'm not going to do that.

I'm giving structure and room to move, delegating with timeframes, encouraging them to create drafts for the rest of us to work from. I spent enough time to create a model draft just ahead of them. (Dec 2007)

In September 2008, I summarised my possible coaching approaches as challenging or encouraging:

- Option A: the coercion - challenge them to change - interjecting at critical spots comments designed to move them on. Phrased as 'critical friend' this sounds much more friendly.
- Option B: the awahi [Maori term for encouragement and support]- draw the best out of them, wherever they're ready to move - behavioural management, differentiation.
- Modelling - not enough by itself. (20 Sept 2008)

At the beginning of this research I assumed that I would make considerable progress in my understanding of how to work effectively with adults. My September reflections describe an extensive set of coaching goals considerably beyond the scope of a Masters research project by a full-time HOD:

What exactly am I trying to achieve by effective coaching?

Yes, bringing the best out of people. But what constitutes that?

Generally:

1. Confident execution of their duties
2. Taking a big picture view of much of their activity whether conducting or planning lessons or assessments or reports

Specifically to do with differentiation:

3. Seeing the value in the levels work
4. Owning the levels work
5. Seeing the match of curriculum levels to their ordinary approach
6. Wanting their lessons to address the needs of more students
7. Seeing levels tasks whether experiment, questions or assignments as all addressing the diversity of students
8. Seeing levels tasks as a part of differentiation
9. Talking about their successes, attempts, plans at levels
10. Taking initiative to create tasks that explicitly address different levels
11. Modifying existing successful lessons to explicitly address different levels. (6 Sept 2008)

After a year of attempting to apply principles of coaching/mentoring to my work with staff, I consider I had made limited changes in my approach to staff:

Oops, Jan 2009, I'm really working the same now! So where have I developed? Perhaps it's a conscious strategy rather than an experiential- this is a good way to get work out of people-technique. I.e. I am now a scientist rather than a technician, with a repertoire that I can draw on, and a rationale for these choices. The rationale means I also notice more about each interaction and how to refine it. (Jan 2009)

CHAPTER 5: DISCUSSION

Introduction

The themes of Learning Needs, and Working Strategically are interpreted in light of the literature. A focus of this study is the use of principles gleaned from the coaching/mentoring literature in leading a secondary science department, with a priority on implementing differentiation to address concerns about students' learning needs. Three key principles from the coaching/mentoring literature which I sought to apply in my interactions with staff are:

1. Tailoring my response to staff in order to meet their individual learning preferences (Kise, 2006).
2. Developing staff in problem solving/self-reflection instead of directly providing solutions (Pitton, 2006; Rosinski, 2003).
3. Guiding staff towards improving their practice, not on providing simple emotional support (Achinstein & Athanases, 2006; O'Mahoney & Matthews, 2005).

STAFF LEARNING NEEDS

Coaching that caters for staff preferences

Kise (2006) advises how to use information of staff preferences to tailor suitable coaching approaches. Her advice seemed to closely match the patterns I had encountered in my interactions with staff. For instance in her advice for a *Feeling* type coaching a *Thinking* type, she says assume your ideas will be debated and don't take it personally, and assume the relationship will stay 'business first.' As a *Feeling* type myself, I have found both of these aspects difficult to accept in the past when I work with Tamara, a *Thinking* type. I felt as if a weight came off my shoulders when I realised our interactions did not need to be understood as a personality clash between us as individuals. Instead our interaction could be

interpreted as typical of any coach with a *Feeling* preference working with staff with a *Thinking* preference .

Kise suggests a person with a preference for *Introversion* will not desire as much face-to-face time with the coach as the *Extraversion* preference. I found this to match the quantity of time each staff member sought with me. Stephen, the only staff member with an *Extraversion* preference, is the only person to frequently request time with me.

Kise suggests those with a *Judging* preference will prefer more structure from the coach, e.g. meeting at regular times, than those with a *Perceiving* preference. Again her suggestions align closely with the patterns I noted with staff. For example, in the Term 1 2008 I initiated weekly individual meetings with staff to work on creating differentiated tasks. Tamara and Stephen, with *Judging* preferences, made the initial meeting time a regular event in their diary, mentioning earlier in the week what they wanted to work on in our meeting slot. James, with a *Perceiving* preference, was happy to work with me on tasks if I turned up at his room at the time I had been using each week, but every time he was surprised to see me; this meeting obviously had not become part of his routine.

Kise suggests that staff who are both *Judging* and *Thinking* typically treat a coach as a useful resource. To meet their needs the coach provides hands-on, relevant lessons that produce tangible results, and gives examples that are easily customised to their subject areas. They want to test something out to see if it works. If it does work, they'll take the time to learn more (Kise, 2006). Tamara has this *Judging* and *Thinking* combination. She is happy to use my research worksheets (as they have lots of structure, which suits her *Thinking* preference) but doesn't use my practical assignments (they offer lots of choice to students, which matches my *Intuition* preference, but not her *Judging* preference) as she says these are too different to how she likes to work. As Kise predicts, Tamara has used my examples to create further research worksheets.

In contrast, Kise describes staff who are both *Judging* and *Feeling* as preferring a coach in the role of an encouraging sage. I consider James, Malcolm and Stephen all have this combination of preferences. Kise warns that the coach should not provide too many choices as staff may be overwhelmed. This advice runs counter to my natural preference of *Intuition*, seen my enjoying flexibility and choice. This could be why these staff have made little use of my practical assignment worksheets as, like Tamara above, their *Judging* preference is a reflection of their perception that choice may lead to chaos in the classroom.

Kise's advice for working with someone with my preferences of *Intuition* and *Feeling* is for the coach to act as a collegial mentor who welcomes my ideas, and then critiques them when invited. This description aligns closely with how I prefer input from other staff. However my staff would be ill-served by my assuming how I like to be coached is the approach that will draw the best from them. Their learning preferences differ from mine and thus they will benefit more from a coach operating in a different way to how I prefer to receive coaching.

Understanding learning preferences brings clarity to a range of scenarios

Understanding seeming dichotomies

Each of the following apparent dichotomies, which seemed so idiosyncratic and unpredictable to me, could be due to the individual combinations of learning preferences in each staff member, and these patterns are shared by people the world over (Myers-Briggs Foundation, 2009). Tamara questions any proposed change (which aligns with her *Thinking* preference) but promptly trials tasks to meet this change (*Judging*). James chats about his out of school activities (*Feeling*) but seldom talks about his decisions to improve his learning for his students (*Introversion*). Stephen's enthusiasm for his subject and his frustration at student behaviour were parts of the same learning preference, *Feeling*, as

were his willingness to accept help in development and his reluctance to create new tasks independently of the team (*Judging*). Stephen and Tamara work together easily on preparing assessments, this aligns with their common *Judging* (planning) preference, but their behaviour management strategies with students are very different, which can be seen as evidence of Tamara having a *Thinking* (logic-focus) preference and Stephen a *Judging* preference (people-focus).

Responding to surface characteristics

In most of the examples in the Findings chapter, when interacting with staff I chose a response based on a close knowledge of my staff, rather than on knowledge of their learning needs. However learning the patterns of learning preferences brings a depth of understanding for me to each situation. In the example about James' lack of gear for an assessment (30 May 2008) I was responding to the surface characteristic of James' lack of planning. I have worked alongside James for several years and used to rescue him to some extent in these small crises by , for example, collecting some equipment for him. On reflection now, James' recurring difficulties over equipment can be seen as part of his *Perceiving* preference; those with this preference prefer to complete tasks at the last minute, and James spent his time on other tasks until the equipment situation became urgent instead of preparing all equipment some weeks earlier . At the time of this interaction I did not notice the *Perceiving* preference element; rather I recorded this interaction in my journal as I was pleased that I thought about my response during the conversation, and gave useful advice whilst still letting him reap the consequences of his lack of planning.

I consider the journal record of this interaction shows my development as a coach/mentor, as I thought on my feet about what to say, my advice prevented his lack of planning from affecting the students, and I did not rescue him from the consequences of his actions. Though I can interpret James' behaviour in hindsight as reflecting a *Perceiving* preference, I didn't think of that during the interaction, and thus my awareness of learning preferences did not directly influence what I said during that conversation.

Understanding learning needs brings clarity to relationship dynamics

An understanding of learning preferences helps me take a more objective view of relationship dynamics between department staff. In the example of James and I working on the 11SCP astronomy task (17 Oct 2008), relationship between staff influenced the coaching/mentoring decisions I made during that interaction and an understanding of learning preferences helps me take a more objective view of these dynamics. Tamara, (*Judging* preference - plans ahead) who likes her resources ready a week ahead of their planned use, finds it very stressful getting updated 11SCP assessment tasks from James (*Perceiving* preference - last minute) who often doesn't update the task until Tamara has requested the task from him for the second time. This affects their relationship as Tamara gets stressed at how James operates, and I think James sees no reason to change his behaviour in light of her stress. Usually I do not intervene in this process as they are very familiar with how the other person operates. If one of them makes a comment to me individually, I'll just comment 'Come on, you know what he/she is like.' However Tamara had given James adequate notice about wanting to use the 11SCP task on Monday, thus I spend an hour working with James to ensure the task got past the nearly-done stage to printed and delivered to Tamara's desk.

Big picture thinking

The concept of big picture thinking has been a recurrent theme with me for many years. I found the idea of learning preferences brought clarity in this area. One of the major changes I found on becoming an HOD was the change in focus from my individual classroom to noticing the big picture surrounding my interactions with my students. For example I began to care about the incoming revised New Zealand curriculum document, the relationship between our students' literacy levels and our teaching approaches, and the balance between school science suitable for citizenship and school science suitable to prepare students as future scientists. In contrast, for my first fifteen years teaching my response to these was 'that's interesting but it doesn't affect my daily life.' I

consider my view to be very common amongst 'rank and file' teachers, as a way to cope with a very demanding career.

Before doing this study I assumed seeing the big picture was a component of undertaking the HOD role. My staff comment that they consider it to be my delegated responsibility to see the 'big picture' and respond wisely to it. Perhaps this big picture view is as much to do with my *Intuitive* learning preference which enjoys the big picture view, in contrast with *Judging* which prefers a concrete, practical applications focus. I am the only person on my staff with the *Intuitive* preference. Thus perhaps those with the *Intuitive* preference bring this 'big picture' thinking to the HOD role, whereas those with the *Judging* preference will approach the HOD role differently.

WORKING STRATEGICALLY

'Do a few things well'

As a HOD I cope with the pressures of constant change by standing firm within the priorities I set for the department (Stoll et al., 2003; Davies & Ellison, 1999). For 2008 the top priority for the science department was differentiation by curriculum level. I was "taking the stance of implementing a few things especially well" (Fullan, 1992, p. 38). To achieve this I consider it my role as the HOD to moderate the influence of external demands on staff (Fullan, 1992), and thereby free staff to concentrate on the departmental priorities. Therefore the examples in this section of the Findings chapter show my attempts at absorbing or deflecting the external demands on department staff.

A second challenge to standing firm within the priorities I set is where department staff have different priorities. As elaborated earlier, staff have commented that it is my role to set priorities for the department. In the example where Tamara says "no one else has to do this amount of work" (16 Feb 2008), I

maintained my focus on differentiation by curriculum level despite her statement. I am convinced about the value to both students and teachers of knowing student curriculum levels in each topic. Therefore I touched on workload first, reinforcing that others were doing similar work, and that other people were available to give advice. Then I revisited the rationale for the work I was requiring of staff, as part of a big picture about helping students move forward. This sounds a simple objective sequence of statements but there was emotional tension within me during this interaction. I wanted to cope with strongly expressed statements from staff members which challenged the wisdom of my requirements of staff, by responding courteously and constructively and still maintaining my requirements for development. My conviction about the importance of this development for our students helped me to maintain my position.

Participants in Wright's (2002) study of New Zealand secondary school HODs had an expectation that effective HODs worked with a sense of calm and order, yet in reality they themselves experienced a "roller coaster of emotions" (p. 136). They perceived stress and tension as normal within the HOD role and that how they handled these stresses was a personal issue rather than part of wider social and educational issues. I too have this perception; I consider that HODs would frequently get a response like Tamara's from staff to development requirements, and to be an effective HOD I need to develop my emotional intelligence to respond courteously when challenged.

Catering to experienced staff who may be open to limited amounts of change

Working with a majority of experienced staff, I recognised they prefer to work in ways they've refined over many years, but Achinstein and Athanases (2006) challenge mentors to focus on development of teaching practice, particularly catering for student diversity. Thus I consider my role as HOD includes helping staff to develop in areas where their current approaches do not cater effectively for the full range of students.

Cameron's questionnaire responses reflected his openness as a developing teacher to my advice. In contrast Malcolm's questionnaire responses indicate that he does not recognise my work getting staff to develop differentiated tasks as helping him to develop his pedagogy. When he gives feedback on the requirements to create tasks differentiated by curriculum level, Malcolm describes these steps as 'good,' but he needed tight requirements in order to participate in this development. I spent many hours considering how to effectively get him to participate in differentiating tasks. I feel his compliance was based on a strong relationship with me built over a decade working alongside one another more than any sense of buy-in to the effectiveness of this approach to drawing the best from the diversity of students in his classes.

Fullan and Hargreaves (1992) suggest that for such staff to buy-in to long-lasting change requires giving room for the discretionary judgement of staff to choose and adapt aspects that will work in their context and their teaching style. In my requirements of staff for the implementation of differentiation, I deliberately allowed these elements of choice and adaptation; staff selected their own focus for creating tasks, and were able to base their work on my templates if they wished that structured support. Kanter's (1988) counsels retaining as many of the existing practices as possible to indicate the leader values staff's existing teaching methods and the department/school traditions. I deliberately incorporated this aspect by suggesting staff take an existing successful task and differentiate it into curriculum levels.

Reflecting on pedagogy has an element of personal 'threat'

I consider staff more open to these direct requirements to create differentiated tasks than to changing their pedagogy for the following reasons. Teaching pedagogy is strongly influenced by staff experiences and personality preferences (Kise, 2006), for instance a teacher's method of delivery usually matches their own natural learning preferences. However, Kise describes how if a teacher only uses that one method of delivery they extend the students who are like them and disadvantage the rest.

For example Tamara runs an orderly classroom and usually keeps all students working together at the same pace on the same task. This is an example of teaching delivery due to her combination of *Judging* (plan ahead), *Judging* (concrete examples), and *Thinking* (logic is priority) preferences. However by requiring all students to work on the same tasks at the same rate she is limiting her students as the rate of work will not suit all students in that class. She has created and used several tasks differentiated by curriculum level, beyond the minimum numbers I have required of staff. Her buy-in to the value of these tasks is seen in her comment that even if the term 'curriculum levels' changes this current development of tasks will never be work wasted (26 Aug 2008). When Tamara uses these tasks her teaching delivery caters more effectively for the range of students in her class, as the tasks allow students to work at their individual curriculum level within her preferred structure of all students working at the same task.

Kise suggests the coach gently uses information and evidence to lead staff to recognise "where their strengths and beliefs lock them into practices that limit their freedom to help students succeed" (2006, p. 15). However to evaluate personal teaching pedagogy may be perceived as emotionally threatening as it involves their sense of their identity as a teacher (Schein, 1978), particularly in the areas where they know their teaching response to classroom challenges is less than optimal, as this could be perceived as a challenge to their self efficacy (Argyris, 1999).

'Undiscussables'

Mentors working with Lee (2006) acknowledged they did not want to jeopardise the relationship with the mentee and therefore avoided addressing difficult issues, e.g. different expectations by the teacher for students of different ethnicity. Difficult issues in my department included staff comments like "it's just chaos if I do experiments with Class A" which reflected a reduced quality of

teaching delivery in some classes by some staff as a response to managing student behaviour. Lee (2006), Pitton (2006), and Scott (2002) all acknowledge the tendency of leaders/managers/ HODs to avoid difficult conversations and reinforce the necessity for coaches/ mentors to be courageous and describe problems they observe in staff teaching practice. Stoll et al. (2003) call such issues 'undiscussables.' I too avoided directly speaking about such areas; instead I chose to work in other areas where staff comments showed they were open to developing their practice e.g. preparing more resources for lower level students.

Wright's (2002) work on New Zealand secondary school HODs has descriptions of weariness, frustration, humour and not wanting to deal with difficult staff which reassured me that my challenges and responses were very similar to other HODs. Wright discussed the potential for tension and emotional stress when HODs facilitate change, particularly when they have little time available during the school day to work with staff.

How much progress have I made?

Prior to this study I summarised my approach to working with staff as "drawing out the best from each through specific encouragement" (Dec 2007), with the exception that I felt I was not yet working effectively with James.

The understanding of learning preferences has helped me become confident in how to interact with James to draw out his best. Perhaps this is one reason why interactions with James form a significant number of the Findings examples. In these examples my coaching often concerns working alongside him to ensure timely completion of assessment tasks. In general I let him reap the consequences of last-minute preparation, however late or insufficiently rigorous assessment tasks have a detrimental effect on other staff, therefore I choose to intervene. My intervention is as a coach, working alongside him rather than as an manager issuing instructions, respecting his ideas how to modify these tasks,

but 'adding my two cents worth' in order that the tasks are completed by the required dates to the required standards.

Wright (2002) notes HOD's time in the classroom reduces their ability to effectively mentor and support departmental members; in her research her participant HOD with a small number of staff was the only one who felt able to provide regular one-to-one support to staff. Wright also described the dilemmas of balancing competing demands from teaching, leading, and personal life; resulting in a feeling you weren't able to do anything really well. At the same time as reading Wright, I read the literature on the difficulties of implementing change (Fullan & Hargreaves, 1992; Kanter, 1988). Together these works released me from a self-imposed expectation that I would have made huge changes in how I approached coaching my department over the course of the study.

Reviewing my year of attempting to apply coaching/mentoring principles to interactions with staff, the framework of understanding learning preferences has brought an increased depth of understanding of staff. The ad hoc nature of most interactions with staff made preparation for coaching more difficult, yet I was often able to incorporate coaching/mentoring principles into these interactions. My manner of interacting with staff has not greatly changed, but frequently I choose my response to staff in light of my understanding of staff learning preferences. Helman (2006) talks of the tension inside the coach/mentor's head as they consider how to phrase the most effective response for the situation, and increasingly through 2008 I paused before responding to staff, selecting a response from alternatives because I thought the point would 'get home' if I phrased it in that way.

CHAPTER 6: IMPLICATIONS AND CONCLUSION

Introduction

In this chapter I briefly describe how my study forms an example for others, the limitations of this study, and the conclusion.

Example for others of reflection and inquiry

There are few studies of New Zealand school 'middle-managers' using coaching and/or mentoring. This case study contributes an example to show other middle-managers what can be done in one year in one specific context; implementing differentiation in a department.

In addition, the action research approach I have used in this study (Cohen et al., 2000) is a very similar process to 'teaching as inquiry' as described in the New Zealand Curriculum (Ministry of Education, 2007) as one strand of effective teaching pedagogy. This case study provides an example for New Zealand secondary senior managers to use when seeking buy-in from HODs and staff to the expectation of the Ministry of Education that teachers will use a 'teaching as inquiry' professional development approach. The value I found in undertaking my own research far outweighed the time involved.

Beyond this expectation of the New Zealand Ministry of Education, other senior managers may be interested in this study as it forms an example of individual action research which is increasingly advocated as effective professional development for teachers. Stoll et al. (2003) describe fostering individual and small group inquiry through action research as one way of catering for the diversity of staff professional development needs. American schools have seen recent changes in professional development, moving from full-staff sessions to small group or individualised professional development (Creswell, 2005; Stoll et al., 2003). Reflecting on your own practice, a large component of action research, is recognised in change literature as having deep and long-lasting effects,

particularly due to the individual engagement in the process (Fullan & Hargreaves, 1992).

Limitations

In this study there are limitations concerning the applicability of the findings to other settings, the influence of researcher background on the findings, in particular the selection of coaching/mentoring principles, and the effect of this study on student outcomes.

The research approaches chosen for this study, a case study of one HOD's action research, mean the findings are not intended to be broadly applied to a range of settings. This case study focuses on one HOD and seeks to understand their perception of events (Cohen et al., 2000). Cohen et al. suggest the theory derived from such low-level data will not be complex; it is false to strive to generate profound theories from case study data. Instead case studies report in rich, thick description that readers may share the lived experience of those studied to some degree, and decide the extent of the application of learning from this case study to their situations (Cohen et al., 2000; Creswell, 2003). Similarly, in an action research framework knowledge is generated through trialling real solutions to real problems (Anderson et al., 2007). In this sense the theory generated from action research is an interpretation of the research setting and does not assert that its findings apply to a broad population (Creswell, 2005).

Personal background will always affect the choices a researcher makes; the 'glasses' they wear will affect what they see i.e. their worldview will affect how they notice particular data and how they interpret it (Clandinin & Connelly, 2000; Creswell, 2003). Therefore the researcher makes explicit their relevant personal background, values and motives. The audience may then judge for themselves how these attributes have influenced the research findings.

In selecting principles from coaching/mentoring literature I focused on advice that overlapped with my established patterns of working. I was looking for frameworks for drawing the best from adults that could encompass my ad hoc approaches to working with staff which simply applied what I found from experience to work well with students. I was open to some change of direction which would build on natural strengths and help diminish some weaknesses in my approaches to staff. This is certainly not a neutral summary of available principles; therefore I am making the rationale for selection explicit to the reader (Clandinin & Connelly, 2000) as it may limit the transferability of my data to some readers.

In common with most studies of teacher professional development (Timperley et al., 2007), I made no attempt to measure student outcomes. Like others, I consider:

Professional development is usually about changing the knowledge, skills, beliefs, and attitudes of teachers without necessarily expecting these changes to have a direct or immediate impact on their students. Instead, the expectation is that cumulative experiences, rather than any specific experience, will result in more effective teaching. (Timperley et al., 2007, p. 19)

CONCLUSION

My intention for this study was to conduct a literature review of coaching and mentoring principles and then apply a selection of these principles to my work with staff as a Head of Department in a New Zealand secondary science department. My underlying purpose was to increase my awareness of principles for leading adults as I had done very limited formal study in this area. The intended application of these principles was to effectively lead the department

to continue the implementation of differentiation into school science programmes.

As I read a variety of coaching and mentoring texts I found one in particular resonated with and extended my existing approaches; Kise (2006) wrote of tailoring coaching to cater for individual staff learning needs. To diagnose learning needs she used the long-standing Myers-Briggs Type Indicator (Myers-Briggs Foundation, 2009) which describes human characteristics in terms of four complementary pairs of preferences.

My findings can be summarised in two main themes; an increased awareness of the importance of learning needs when working with individual staff, and working strategically.

Prior to this study I was responding to staff personalities to attempt to draw the best from each person. Using Myers-Briggs as a neutral framework for describing personality, then recognising the learning needs that arise from those personality descriptions, gave me a framework and guidelines for purposeful coaching / mentoring interactions with staff. The concept of learning preferences brought clarity to individual staff responses to different situations. These situations initially seemed so idiosyncratic and unpredictable to me, but can be interpreted as due to the individual combinations of learning preferences in each staff member, and these patterns are shared by people the world over.

There were a variety of competing demands from outside the department and from individual staff priorities. Over the course of this study I did extensive reflection on my selection of differentiation to cater for student diversity, on my using a coaching/mentoring approach for this implementation, and on how to work with experienced staff who may have limited openness to change. The reflection increased my clarity about both the direction and the approaches, and this helped me to maintain these in the face of competing demands.

I chose to work with staff in areas of their perceived needs in order that they would perhaps be more receptive to change. For example if I spend time working with Tamara in areas where she seeks feedback or advice on creating a wider range of tasks differentiated by curriculum level, this will achieve the consequence of teaching delivery that gives a wider range of students increased opportunity to achieve their best. This can happen without Tamara perceiving my work with her as emotionally challenging. In contrast, if Tamara and I were to talk in depth about the consequences of learning preference on teaching delivery and the consequences of teaching delivery on students' opportunity to succeed, perhaps this would have the effect of in-depth understanding by Tamara on her practice and the long-term effect of improved teaching based on stronger pedagogical foundations. However this theoretical outcome may not eventuate if the emotional challenge to her sense of self-efficacy or identity as a teacher causes her to withdraw from the interaction.

In the face of competing demands leaders stand firm within the priorities they set for their department (Stoll et al., 2003), deciding they will do a few things well (Fullan, 1992). For me in my school, my priority is using differentiation to cater for student diversity, and my approach is tailoring my coaching of staff to individual staff learning needs.

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