

**THE INTERPLAY BETWEEN TEACHERS' BELIEFS AND PRACTICES IN A
MULTI-AGE PRIMARY SCHOOL**

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ABSTRACT

THE INTERPLAY BETWEEN TEACHERS' BELIEFS AND PRACTICES IN A MULTI-AGE PRIMARY SCHOOL

The purpose of the research documented in this thesis is to investigate how one particular approach to groupings in one primary school, commonly referred to as multi-age, enables and constrains the practices and actions of its individual teachers. This study is located in a literature that examines the potential that beliefs and belief systems offer for understanding how teachers make sense of, and respond to particular educational contexts. It will be of particular interest to the community of scholars who are investigating the uptake of curriculum innovations in the classrooms of individual practitioners.

The philosophical framework underpinning multi-age schooling is significantly different from that operating within the traditional lock-step system. The conventional school organisation has the child move through a predetermined curriculum at a fixed pace, whereas multi-age classes require that teachers focus on needs-based teaching, thus adapting the curriculum to suit the individual student. As a result of this shift in emphasis, it has been common for teachers in multi-age schools to experience dilemmas caused by the dissonance between their own and the school's assumptions about teaching, learning, knowledge and social relations. However, this clash of individuals' beliefs and mandated practices is an under-researched area of scholarship particularly within multi-age settings, and is thus the focus of the present research.

A framework based on the construct of beliefs and belief systems was used for understanding the personal and idiosyncratic nature of a teacher's practice. Such a framework proposes that beliefs can be classified in terms of personal assumptions about self, relationships, knowledge, change and teaching and learning. These classifications, rather than being discrete dimensions acting in isolation, tend to be organised into a coherent and interdependent belief system or orientation. The notion of orientation was

found to be a suitable framework within which to investigate the interplay between beliefs and practices over a two year period in one school context that is likely to provide challenges and opportunities for professional growth and development.

Because the study focused upon the beliefs and practices of six teachers in a multi-age setting, elements of a qualitative approach to research were employed. The research design adopted for this study is grounded in an interpretative approach which looks for culturally derived and historically situated interpretations of the social world. Within this framework a case-study approach to research was used so as to reveal the interplay between the teachers' beliefs and practices.

The study found that the concept of orientations provides a suitable framework for understanding the personal and idiosyncratic nature of a teacher's beliefs and practices. It was evident that beliefs about self, relationships, knowledge and change were highly significant in shaping the essential nature of teachers' orientations. It was found that a summary label, based on these four beliefs, could be used to define the thematic nature of each teacher's orientation. These recognisably different labels demonstrated that each teacher's four beliefs were not just a pattern, but also a thematically defined pattern. It was also found that whilst some beliefs are thematically central other beliefs are not inherently thematic but are influenced in thematically derived ways. It was the configuration of these core/secondary beliefs that highlighted the importance of investigating belief combinations rather than discrete belief dimensions when attempting to understand the teacher as a person.

It was also concluded that the teachers' orientations in this study structured their practice in a way that was personal and internally consistent, indicating the dynamic coupling of beliefs and practices. It was clear that individual orientations, shaped by core beliefs, framed the challenges and possibilities that the multi-age ethos offered in varied and personal ways.

In addition, the study found that the patterns of, and reasons for, change were complex and therefore it is unlikely that professional in-service will succeed if based on only one of the models of change proposed in the literature. The teachers in this study did not experience dilemmas as dichotomous situations but rather as complex and interrelated challenges to their whole belief system. Not all the teachers in this study approached the challenge of change in the same way. It was evident that individuals had constructed their own narrative for the need to change, and that this orientation tended to dominate the self-improvement agenda.

Finally, this study demonstrated that not only the educational consequences of an innovation need to be taken into account, but also how well it is implemented in each classroom, and how compatible each teacher's orientation is with the ethos underpinning the innovation.

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I am conscious of a personal experience of growth as I have studied the complexities and dimensions of the process of change, lived and embedded in the life of individual teachers. My journey has led me to unexpected insights that now infuse my leadership style and professional relationships.

STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signature: -----

Date: -----

CHAPTER ONE

THE RESEARCH DEFINED

1.1 INTRODUCTION

This is a study about how one particular approach to groupings in primary schools, commonly referred to as multi-age, enables and constrains the practices and actions of individual teachers. It will be argued that multi-age schooling is underpinned by a complex pattern of beliefs. How these beliefs impinge on the beliefs and practices of individual teachers will be the central focus of the thesis.

1.2 BACKGROUND TO THE STUDY

The most common method of grouping students in primary schools is by age grade level in which pupils of similar age are taught an age appropriate curriculum. However, despite its prevalence as the accepted organisational structure for primary education, the concept of the graded school has not always been the preferred system, particularly prior to the mid nineteenth century (Anderson, 1993; Chase & Doan, 1994) and other systems have persisted and been developed as alternatives, notably the multi-age structure (Anderson, 1993; Gutierrez & Slavin, 1992). Indeed the recent strong revival of interest in multi-age schooling (Fogarty, 1993; Pratt, 1992; Daniel & Terry, 1995) challenges the efficacy of the lock-step system and the age stratification culture surrounding it. The proliferation of schools that have moved into a multi-age structure both in Australia and overseas has ensured that the concept has now become part of the educational lexicon worldwide (Goodlad & Anderson, 1987; Pavan, 1992). A recent review on education in Queensland (Wiltshire, McMeniman, & Tolhurst, 1994), for example, acknowledged the significance of adopting a more flexible approach to schooling by recommending, "a move away from the lock-step approach based on chronological age to a multi-level approach for years 1, 2 and 3" (p.153).

Similar initiatives have also been taken in other Australian states. In Victoria, for example, the Directorate of School Education established a pilot project to implement multi-age classes in forty schools in 1994 (Education Victoria, 1995). In South Australia initiatives that have focused on developing and implementing multi-age schools have been in progress for twenty years. Likewise flexible approaches to schooling based on multi-aging have also become a recognised part of the education system in England, New Zealand and America (Connell, 1987). However, the questions still remain first, as to why there has been this move towards a multi-age approach to school organisation and second, why is it relevant to the background and purpose of this study.

In recent years there have been several developments within educational research and practice that have called into question the legitimacy of the lock-step age graded system of teaching by emphasising the importance of catering for the multiple needs of individual students. Indeed this whole notion of catering for individual learning needs and developmental levels, which are not grade level based, has been presented to teachers in Queensland through significant innovations such as the P-10 framework (Dept of Education Queensland, 1988) and the recently introduced English syllabus (Dept of Education Queensland, 1994), both of which stress the importance of adapting the curriculum to local and individual needs. Likewise fundamental approaches such as the acceptance of multiple intelligence (Gardner; 1987) and acknowledgement that all people can learn under the right conditions (McCombs, 1991) have challenged the assumptions that a student's capacity to learn is fixed and develops on an age-locked basis.

The academic and social legitimacy of age segregation and ability grouping has also been called into question by both educational researchers and practitioners (Pavan, 1992; Goodlad & Anderson, 1987; Mason & Burns, 1996) because of the dysfunctional impact it has on individual students' self esteem and self concept. In some districts in America for example, dissatisfaction with ability groupings has led to legal disputes on curriculum and tracking issues.

It was within this climate of reassessing the legitimacy of the traditional age-graded system that the school at the centre of this study was established. St Clares College, Brisbane was established in 1988, as an initiative of Brisbane Catholic Education. A description of this school is provided in chapter four. It had been decided by the educational authorities responsible for the development of the college, that the primary section, from years one to seven, would be a multi-age school. The task of developing and implementing the multi-age philosophy of the primary section was given to the writer who was appointed the first principal. At that stage I knew very little about multi-age schooling, other than its broad aim to cater for the needs of individual students in a non-graded arrangement. The challenge of constituting and opening a multi-age school has proved to be a constant and ongoing task, both for myself and the teachers working within its environment. It soon became obvious though that the philosophical framework underpinning multi-age schooling was significantly different from that operating within the traditional lock-step system. The conventional school organisation has had the child move through a predetermined curriculum at a fixed pace, whereas multi-age classes require that teachers focus more on needs-based teaching, thus adapting the curriculum to suit the individual student. As a result of this shift in emphasis, it has been common for teachers in this school and other multi-age schools to experience dissonance between their own and their school's assumptions about teaching, learning, knowledge and social relations. This dissonance is often heightened by the traditional educational background of the teachers, including their own schooling and the approaches followed in their preservice training at university. The challenge of how to resolve the numerous dilemmas that the multi-age structures evoked in the school has been ongoing and has led directly to this study.

1.4

PURPOSE AND OUTLINE OF THE STUDY

The general aim of this study was to investigate how multi-age structures impinge on the beliefs and practices of individual teachers in the school, with the intention of providing a framework for professional development for those teachers. This task was structured on several subtasks: to develop an understanding of the beliefs and practices inherent in the multi-age approach to schooling by reviewing the literature; to review and evaluate the literature linking teachers' beliefs to their professional practices; to anticipate the dissonances likely to arise for conventionally trained teachers operating in a multi-age school; and to undertake detailed interviews, observations and analyses of teachers in the school to describe their beliefs and practices and to understand the tensions they experience and the consequences for their teaching practice.

Among the many tentative questions jostling for attention in the early stages of this study, and which were important in the evolution of the research questions and in shaping the design of the inquiry, were those focused on providing a framework for clarifying the notion of multi-age and how it influenced teachers' beliefs and practices:

1. What are the central characteristics of the multi-age approach?
2. How do these characteristics differ from the conventional age-graded, lock-step approach?
3. What is the evidence for different impacts of the two approaches?
4. Could the absence of clear educational advantage for multi-age be partly due to the 'clash of cultures' represented by conventionally trained teachers and multi-age policy?

These questions will be investigated in chapter two when the literature on multi-age is reviewed. A brief overview of this literature is now presented.

1.5

WHAT THE LITERATURE ON MULTI-AGE REVEALS

The limited research evidence that can be found focuses mainly on comparative studies between multi-age groups and single age classes. Proponents of multi-age have used this approach both to justify their advocacy by highlighting the gains that multi-age groups have to offer over lock-step groupings, and to articulate the educational presumptions of the movement. Both of these broad tenants will now be considered briefly.

There is mounting evidence for the positive effects of multi-age on personal and social development. For example several studies (Milburn, 1993; Pratt, 1992; Miller, 1995) have found that students in multi-age schools had more positive attitudes to learning, and more appropriate social interactions than those in graded schools. Pavan's (1992) review of sixty four research studies addressing multi-age approaches led her to conclude that attendance in a multi-age school may improve the students' chances for good mental health and positive attitudes to school. The research on the academic benefits of multi-age classes has been divided for some time. Martin and Pavan (1976), for example, reported that in some instances students in multi-age programmes performed better than their peers in single age classes whereas in other studies there was no significant difference. Their conclusions have been supported by several other recent studies on the academic outcomes of multi-age classes (Pavan, 1992; Anderson, 1993; Cohen, 1987; Veenman, 1996).

Educational Presumptions of Multi-Age

Advocates of multi-age have also stressed the substantial differences in underlying beliefs that exist between their approach and those adopted in conventional schooling (Pavan, 1992; Goodlad & Anderson, 1987; Miller, 1995; O'Connor, 1996). In their efforts to bring to the forefront the implicit assumptions underpinning multi-age, such proponents have stressed that it is not just a reorganisation of the graded school system, but a total educational philosophy. Key factors of the multi-age approach include the continuity of learning; curriculum negotiation between teacher and child; providing opportunities for

each child to interact with children and adults of varying personalities, backgrounds, abilities, interests and ages, and flexible arrangements for individuals to progress at their own pace and in appropriately varied ways.

It is these underlying presumptions and beliefs of the multi-age approach which suggest why there can be a clash of belief systems when individual teachers with conventional backgrounds and experiences are confronted with a multi-age approach. Importantly it will be shown in chapter two that there is a lacuna within the multi-age literature which has failed to investigate the extent to which teachers' beliefs determine the successful implementation or otherwise of a multi-age philosophy.

What the gap in the educational literature on multi-age highlights is the potential that the concepts of beliefs and belief systems have in providing a framework for understanding the tensions between multi-age school policy and teachers' orientations and practices. This gap prompted two questions that called for a review and evaluation of the literature linking teachers' beliefs to their professional practices in educational contexts:

1. Can the notion of belief and belief systems be used to frame the answer to the question about the 'clash of cultures' teachers experience when confronted with multi-age beliefs and practices?
2. How can teachers' beliefs and orientations be conceptualised and what evidence is there about their impact on practice?

These questions will be addressed in chapter two by investigating the complex nature of teachers' beliefs and practices in educational settings. It will be argued that beliefs capture the notion of the teacher as a person and provide the framework within which knowledge, skills, mental processes and dilemmas are integrated by personal themes.

1.6 TEACHERS' BELIEFS AND PRACTICES IN EDUCATIONAL CONTEXTS

It will be argued from the literature in chapter two that the most appropriate perspective for understanding how teachers make sense of, and respond to, particular educational contexts is through the construct of teachers' beliefs. This view is based on the assumption that beliefs are the best indicators of the decisions individuals make throughout their lives (Fang, 1996; Richardson, 1996; Pajeres, 1992; Bandura, 1986; Dewey, 1933). Initially, for the purpose of this study, teachers' beliefs are defined broadly as tacit, often unconsciously held assumptions about students, classrooms, and the academic material to be taught (Kagan, 1992. p.66). It will be proposed that beliefs can be described in terms of a limited number of key features. First, beliefs can be classified in terms of personal assumptions about relationships, knowledge and society; professional beliefs about teaching and learning; and beliefs about change and development. Second, it will be proposed that these classifications tend to be organised into clusters or belief orientations (Kemmis, Cole & Suggett, 1983; Pratt 1992 ; Kember, 1997; Samuelowicz & Bain, 2001) which have the potential to provide a convenient interpretative framework for reviewing the data from this study. Third, teachers tend to adopt and enact one orientation, although different social settings, such as that provided by multi-age, can tend to bring about oscillations between orientations. A description of the school context at the centre of this study will be presented in chapter three.

1.7 EVOLUTION OF THE RESEARCH QUESTIONS

It is the construct of teachers' beliefs and belief systems that offered the potential for understanding the personal nature of a teacher's orientation and the process of change that takes place within a belief system when confronted with dilemmas. Consequently, the research sought to identify and investigate the nature of individual orientations and how the interplay between beliefs and practices is likely to provide opportunities for professional growth. The notion of a belief and belief system provided a suitable framework from which the research questions that directed this study could be formulated.

The first major research question asked:

Question 1: How can teachers' beliefs and orientations be conceptualised?

This question explores whether teachers' beliefs can be described as discrete items acting in isolation or rather are interconnected and influence all aspects of their practice. The interconnected nature of a teacher's beliefs has the potential for understanding why each orientation may have a 'personal theme' that determines practice within the classroom. If this is so the reasons for change may also be complex because no one belief can be considered in isolation when investigating the process of change.

The second research question asked:

Question 2: How do the individual orientations frame professional practice within the multi-age setting of the school?

The multi-age ethos favoured by the school provided different challenges for individual teachers. This question will investigate how the notion of orientations may explain why there were subtle differences in the way each teacher approached their multi-age classroom and the possible press for change. The question will also explore how orientations may illuminate the dynamic coupling that exists between beliefs and practices.

The third research question asked:

Question 3: What are the implications for professional in-service and for the evaluation of complex curriculum initiatives like multi-age primary schooling?

This question will investigate whether the thematic and interdependent nature of each teacher's orientation was instrumental in determining how s/he enacted the curriculum in the classroom, as well as being evident in the teacher's evolving perception of themselves as a multi-age teacher. These questions have implications for those interested in making substantive changes in curriculum instructional practices through the introduction of innovative programs and professional development opportunities.

1.8

RESEARCH DESIGN

A central purpose of this study is understanding how individual teachers make sense of contexts that can cause a clash of beliefs. Consequently it was necessary to adopt a research design that enabled me to capture and report on the experiences of all the participants involved in the study.

The research design adopted for this study (set out in detail in chapter four) is grounded in an interpretative approach that looks for culturally derived and historically situated interpretations of the social world (Crotty, 1998). This approach has been used because it seeks to explore the identity and meaning of the participant's beliefs and practices within a context of professional discourse. The interpretative approach assumes that if human behaviour is to be effectively understood then it must be recognised as intentional and is actually what people believe themselves to be doing. This perspective was of particular value for the purpose of this research because I was interested in understanding the meaning people construct and how they make sense of their experiences of the world. It was important that a framework be in place that enabled me to develop sufficient richness of data that I could identify and describe the belief systems of the individual teachers and how they were enacted in their multi-age classroom. Therefore this study was grounded in that branch of interpretative research identified as symbolic interactionism. Symbolic interactionism is a paradigm in which reality is viewed as a complex network of interactions among people who symbolically interpret their actions and those of others. Within this

framework the research adopts a case-study approach to reveal the interplay between the teachers' beliefs and practices.

The case-study approach includes some recent attempts to apply the interpretative paradigm to the careful study of practices such as evaluation, especially in what is termed the 'democratic mode' (Walker, 1985). It attempts to utilise qualitative research methods to obtain and portray a 'rich' descriptive account of meanings and experiences of people in their social setting. Case study method was used with six teachers drawing upon interviews, classroom observations, documentary evidence and written responses to particular questions. The evidence that was collected from the six participating teachers is presented as individual stories contained in an appendix to this study. These case studies will be used as a platform for a more theory-centred analysis in chapter five, where I will compare and contrast the cases so as to reveal their implications for the belief-practice nexus.

1.9

SIGNIFICANCE OF THE RESEARCH

The findings of this study led to certain conclusions and implications that contribute to the theory of teachers' beliefs and practices in educational settings. It will be claimed in chapter seven that the notion of orientation is an appropriate characterisation to describe the interrelated beliefs and practices of the teachers in this study. The study demonstrated that the belief orientations of the teachers in this sample framed all aspects of their professional practice in a personal way that either hindered or enhanced the implementation of the multi-age philosophy of the school. It was also evident that the patterns of, and reasons for, change were complex and that if change is to be undertaken the thematic nature of a teacher's orientation needs to be considered.

This study will now proceed to investigate the literature on multi-age to determine its central characteristics so that the research problem, which is at the centre of this study, can be identified. It will be noted that there is a significant lacuna in the literature on multi-

age that fails to address the impact such groupings have on the thinking and practices of individual teachers.

CHAPTER TWO

REVIEW OF THE LITERATURE

The primary focus of this study is to investigate how a particular multi-age school context influences the beliefs and actions of individual teachers, consistent with other research examining the significance of work context in teachers' practices (Day, 1990; Hargreaves, 1988; Zeichner, Tabachnick & Densmore, 1987; Russell & Munby, 1991; Lipka & Brinthaupt, 1999). It was expected that most participating teachers would have been influenced by the conventions of the traditional lock-step schooling (Barnes, 1992) and consequently would experience varying degrees of dissonance between their goals and the goals of a multi-age culture (Feiman-Nemser & Floden, 1986; Angell, 1998).

2.1 THE CENTRAL CHARACTERISTICS OF MULTI-AGE

The main focus of the literature on multi-age schooling has centred on demonstrating and justifying the viability of the approach, rather than investigating the influence of the multi-age philosophy on the beliefs and practices of teachers. Nevertheless, a review of the available literature is useful because it permits inferences to be drawn about the 'belief system' that underpins a multi-age approach and which differentiates it from conventional schooling. A brief description of the historical development of multi-age will be presented and why it has continued to capture the interest and support of educators. From a review of the available literature, claimed advantages and disadvantages of multi-age will be presented and how these outcomes are used for comparative studies with conventional classes. The review will also reveal how there is a gap in the literature on multi-age which fails to address the impact such groupings have on the thinking and practices of individual teachers.

The Development of Multi-Age Structures

Multi-age is a method of school organisation in which children of different ages are, as a deliberate educational policy, placed together in the same class (Buston, 1978, p. 143). This approach to grouping children is not a new or radical one and indeed was a feature of the educational system well before graded classrooms achieved dominance. Traditionally, schools contained considerable age diversity, as manifested in particular in the one-roomed classroom (Pratt, 1993; Gulliford, 1985). A description of one of these classrooms is provided by Somers (1982) in which he outlines the common features that could be found in such a setting:

Of necessity much learning in the areas of health, science, art and craft was done on a whole school basis, with the older children helping younger ones and the younger ones learning from the work habits of the older ones. In the playground children often had no option but to play with the younger or older children. Outings would occur on a whole school basis and instruction derived from these outings would necessarily be on a thematic approach, even though the word might not have been used in these days (p. 388).

Gulliford (1985, p.10) likewise notes that terms such as "open concept classroom", "peer teaching", and "individual learning centres", all refer to techniques that have been used for years in one-room schools.

The Rise of Conventional Schooling

In tracing the decline of one-room schools Pratt (1993) pointed out the influence of the industrial revolution on the thinking of politicians and educational authorities. He quotes the observation of one particular educational body in 1852 which saw the possibilities for education contained within successful manufacturing practice:

The principle of the division of labor holds good in schools, as in mechanical industry. One might as justly demand that all operations of carding, spinning and weaving be carried out in the same room, and by the same hands, as insist that children of different ages and attainments should go to the same school and be instructed by the same teacher (quoted in Pratt, 1993, p. 46).

Gradually legislation has been introduced standardising age of entry and establishing sequential grade levels and curricula, so that they now predominate. Commenting on this development, Goodlad and Anderson (1987, pp. 204-205) note that it must be appreciated that the nineteenth-century graded school was a significant creative effort appropriate for its time, in that it permitted the convenient classification of unprecedented numbers of pupils pouring into the schools during the second half of the century.

The Continuing Interest in Multi-Age

Despite these developments however there has been a gradual resurgence in the interest in multi-age classes. Several researchers have attempted to provide reasons why the proponents of multi-age view it as a genuine and more appropriate alternative to teaching and learning than the conventional lock-step system (Goodlad & Anderson, 1987; Anderson, 1993; Maeda, 1994). Goodlad and Anderson (1987) for example, claim the simple fact is that a literally graded approach to instruction does not work, and teachers and administrators must continually subvert it in order to deal with the realities of individual differences. This concern is also shared by a number of critics of the lock-step system (Pratt, 1993, Gaustad, 1995; Anderson, 1993) who argue that it has failed to accommodate wide varieties in children's rates of learning, and has used strategies such as retention and grade skipping to place students who fall behind or move ahead of their grade level peers. A number of educationists (Ellison, 1972; Connell, 1987) have also focused on the dysfunctional impact of graded textbooks as being instrumental in the development of a

curriculum that has fixed content, fixed procedures and fixed groupings. As Ellison (1972) comments:

...they leave little room for flexibility and individualisation. They block the open classroom, stifle the emerging curriculum, and negate the children's self-selection of content. Graded classrooms and graded textbooks have little justification in fact, in research, or in philosophy (p. 213).

Pavan (1992) attempted to capture the differences for example when he compared traditional schooling with the multi-age system on the basis of key features of each. Table 2.1 highlights some of the central characteristics of multi-age. It is these characteristics which will be elaborated in the following literature review and will also be used as a platform for further investigation of the beliefs which underpin the multi-age philosophy.

Table 2.1. Comparisons of Various Schooling Elements for Graded and Multi-age Systems (after Pavan, 1992)

CATEGORY	CONVENTIONAL GRADED SYSTEM	MULTI-AGE
Teacher decision-making power	Very limited, system directed	Strong; teacher-directed
Teacher freedom within curriculum	Limited	High
Teacher workload	High; enervating	High, invigorating
Adult collegiality	System discourages	System encourages
Instructional methodology	Somewhat structured	Varied and flexible
Pupil-pupil interactions	Limited	High
Competitive atmosphere, pupils	High	Low
Relationships with parents	Grade-promotion focus; tension	Progress-focus; more relaxed
School phobia and pupil tension	Familiar data	Notable reduction
Overall atmosphere	Some win, some lose	Every student a winner
Expectations for pupil performance	High unrealistic	High realistic
Reporting/evaluation system	Competitive/Comparative	Individualised
Pupil perceptions of academic success	Tend to follow the normal curve	Personalised and positive
Curriculum design	Rigid sequence	Flexible sequence

3.1 HOW MULTI-AGE IS DEFINED AND DESCRIBED IN THE LITERATURE

Providing a viable alternative to that offered by the traditional graded structure has been an ongoing challenge to the advocates of multi-age. Their search for an educational philosophy that acknowledges the individual developmental rates of each child and which does not classify them with a grade number that has the same fixed meaning is reflected in the multiplicity of interpretations they have adopted. As will be highlighted in the next section, the notion of combining different ages within the one class has been described using various titles, which in turn has led to some definitional confusion. This has become particularly evident when the different definitions are used interchangeably.

Composite Classes

Composite classes (also known as multi-grade) are the direct result of a bureaucratic decision, such as declining or uneven numbers, to combine two or more grades in one classroom. (Veenman, 1995; Gutierrez & Slavin, 1992). The groups involved generally operate separate programs and there is little interaction between the different age groups or grade levels. Composite classes can frequently cause anxiety and concern among teachers, administrators and parents (Veenman, Voeten & Lem, 1987; Bennett, O'Hare and Lee, 1983; Bullock Report, 1975). As Bennet et al. (1983, pp. 55-56) noted, the change to composite classes is not usually by choice because head teachers prefer a twelve month age span and hold negative attitudes towards its implementation. Head teachers also perceive staff to be less committed to and less accepting of such change. Veeman (1996) found also that teachers saw composite classes as imposing a greater workload, stretching classroom resources, limiting time for working with individual students and raising concern among parents about the academic achievement of their children.

Multi-Age

The name multi-age, which uses a range of ages rather than single age grades as the basis for grouping students, has been used by several researchers and practitioners (Ham, 1985; Milburn, 1993; Somers, 1982; Pratt, 1986; Veenman, 1995; Chase & Doan, 1994). The pedagogical reasons for doing so are explained by Chase and Doan (1994) who define a multi-age class as:

a class composed of children of different ages intentionally grouped for learning. Multi-age classes are more than just a way of organising. They are a reflection of our understanding of how children learn and how teachers can provide effective learning environments (p.3).

As Chase and Doan elaborate (1994, pp.3-5) the rationale for using multi-age is based on the notion that it gives each child an opportunity to associate and work with others on the basis of skills, abilities, interests, personality and age. This structure, as a consequence, is also more likely to reflect the range of social situations in which individuals will find themselves throughout their lifetime. The approach also provides children with greater opportunity for a wide range of relationships and social experiences and therefore promotes development of their social skills and cooperative behaviours. It also takes the focus off meeting the needs of a group of children and instead challenges the teacher to meet the needs of individual learners.

Family Groupings

The concept of family groupings is often used interchangeably with multi-age in the educational literature by a number of practitioners and researchers (Milburn, 1981; Schrankler, 1976). Katz, Evangelou, and Hartman's (1990) claim this is a suitable title for groupings across the ages as:

Family groupings typically include heterogeneity in age. The family grouping provides its younger members with the opportunity to observe, emulate and imitate a wide range of competencies in all domains. Older family members have the opportunity to offer leadership and tutoring and to assume responsibility for less mature and less knowledgeable members (p.2).

Buston (1978, p.144) also prefers this concept as he sees that in the family circle the young child learns the culture of the society. Parents and children in this structure establish clear expectations about the learning and socialising process. At the same time all members are used as both model and teacher. The concept of family groupings as understood by Gaustad (1995) and Buston (1978) also has the benefits of maintaining continuity as teachers remain with the same students for a minimum of two years and thus are in a sound position to evaluate cognitive progress.

Non-Graded Groupings

The use of the term non-graded is also often used in conjunction with the concepts of family groupings and multi-age (Goodlad & Anderson, 1987; Guiterrez & Slavin, 1992; Pavan, 1992). Anderson (1993, p. 31) for example claims that a major benefit of non-graded groupings is that it allows for the "organisation of the teaching staff into teams, with teachers having maximum opportunities to interact and collaborate." Non-gradedness, Anderson (1993, p. 31) also claims, leads to the replacement of competitive-comparative evaluation systems with assessment and reporting mechanisms that respect individual progress and avoid competitive comparisons.

Pavan (1992, pp. 64-65) likewise sees non-graded classrooms as allowing for students to be active participants in their learning and in the collection of documentation to be used for assessment and evaluation. Within the non-graded classroom, the continuous progress of

pupils is reflected in students' growth of knowledge, skills and understanding, not movement through a predetermined sequence of curriculum levels.

For the purpose of this study the term multi-age will be used to encompass the concepts of family groupings and non-gradeness, as all three appear to have the common philosophy of enabling students to progress at their own pace and in appropriately varied ways. This is in contrast to the conventional lock-step and composite or multi-grade classes.

2.3 EVIDENCE FOR DIFFERENT IMPACTS OF THE TWO APPROACHES

It appears at this stage from the rhetorical and anecdotal evidence being presented by the proponents of multi-age groupings that there are a number of benefits to children when not constrained by age expectations. These benefits, as outlined in Table 2.1, seem to be based on the assumption that multi-age groupings allow for a diversity of interactions and learning opportunities that are not readily available within the social context of the traditional classroom. There has been an increasing number of comparative studies to back up these claims. The next section will investigate the evidence from these studies, which have examined both the assumed, affective and cognitive benefits attributed to multi-age settings.

The Affective Benefits of Multi-Age Groupings

The research evidence that is available suggests that the major benefits for pupils learning in multi-age classrooms are more likely to be affective than cognitive. These findings have been made in relation to factors such as mental health, social/emotional development and general liking for school. The following review of the literature will firstly consider those studies which have examined the social variables most benefited by multi-age and then progress to those studies which indicate why such benefits may have accrued.

Hammack (in Veenman, 1995, pp.365-366) studied the relation between the single-age and the multi-age classroom and the self-concept of three, four and five year old children. Both classrooms were similar in the curriculum taught, the physical appearance of the room and the daily routine. Self-concept scores were found to be significantly higher in the multi-age groups than in the single age groups.

Milburn (1993) also studied two schools of similar size over a five year period but with an older range of students. The experimental school had five multi-age classes with an average of twenty five children in each. One class ranged in age from six to eight, one from seven to nine, one from eight to ten and two from nine to eleven. The control school assigned all the students to specific, sequential grade levels and emphasised an orderly progression in curricula content. The two schools were located in similar socio-economic areas and there appeared to be no major problems with either staff or parents. Milburn (1993) used two tests to compare the affective areas; the Piers-Harris Children's Self-Concept Scale and the National Foundation for Educational Research Attitude Survey. Any test administered to a specific grade level in the control school was also given to a similar number of age-mates in the experimental school. Milburn (1993) found that the children in the experimental school had a more positive attitude to school than did their counterparts in the traditional grade-level groups. For example, sixty one percent of children in control groups disagreed or strongly disagreed with the statement, "I dislike school," compared with ninety nine percent in the multi-age school. Similar differences between multi-age and control groups showed up on the statement, "I think school is boring." Forty six per cent of children in multi-age classes strongly disagreed, compared with two percent of youngsters in grade-level groups.

Similar findings on the affective benefits of multi-age classes in the area of self concept, self esteem and attitude to school have been noted by other researchers (Schrankler, 1976; Pratt, 1993; Chase & Doan, 1994; Schroeder and Nott, 1976; Pavan, 1992; Veenman, 1995).

Why Affective Benefits May have Accrued

Several studies have attempted to explain why such benefits may result from multi-age groupings. Mycock (1972) compared the effects of multi-age and conventional groupings in a British primary school. The sample included four schools, two of which were multi-age and two conventionally graded. The schools were paired for locality, size, staff ratio and similarity of teaching method. A variety of research techniques such as time sampling, sentence-completion test and the Test Anxiety Scale for children were used. Mycock (1972) predicted that the multi-age grouped children would show evidence of better social adjustment and an increased range of social interactions, deeper teacher-child relationships and less anxiety. Significant differences favouring multi-age classes were found in the range of social interaction, effects of a lengthened teacher-child relationship and in levels of aspiration. Mycock concluded that multi-age classes result in greater emotional security and greater stability because children have a wider range of immediate and available roles, have a closer, warmer relationship with the teacher and are not placed under undue stress to compete with others. The notion of increased harmony in the multi-age classroom which engenders a co-operative and non-competitive environment has also been noted by several other researchers (Ingham, 1994; Stone, 1996; Daniel & Terry, 1995). Miller (1995, p. 28) from his research noted that the positive attitude to schooling results from an environment in which students are able to work at different levels without obvious remediation or "going back." Pratt's (1993, p.43) explanation of such a phenomenon is that multi-age classrooms are socially and psychologically healthy environments which mirror more closely evolutionary development and social situations in non-schooling settings where children make friends outside their narrow chronological age band.

Collectively then both the empirical studies and the anecdotal evidence indicate that multi-age groupings have a generally positive effect on the social and emotional development of students through creating a teaching-learning environment in which co-operation, nurturance, recognition of individual developmental rates and friendships are valued. The

research evidence on the cognitive outcomes of multi-age groupings however appears to be less compelling than the affective outcomes.

Research on the Cognitive Outcomes of Multi-Age

Research into the cognitive benefits of multi-age groupings (Bennett, O'Hare & Lee, 1983; Milburn, 1993; Pratt, 1993) indicates that there is a limited effect on academic achievement. Milburn (1993, pp. 512-514) in his work with multi-age and traditional groupings found little difference in basic skills achievement levels. He used two tests to compare the cognitive development of students in a multi-age school and a traditional school; the Gates-MacGinitie Reading Test and the California Achievement Test in Mathematical Computation. The multi-age classes scored significantly higher on the vocab section of the reading test and the youngest age children in multi-age groups scored higher on the basic skills test than age-mates in the traditional schools.

Milburn (1993) noted that there might be two possible reasons for the difference in scores; first teachers in multi-age classrooms may have placed greater emphasis on oral language and on verbal exchange of ideas; secondly teachers working in multi-age settings tend to speak at a level geared to the comprehension abilities of the older children. However because the oldest children in multi-age groups performed much like their counterparts in the traditional schools, Milburn (1993) inferred that the advantage of multi-age groupings for younger children may stem from emulation; perhaps younger children in such groups strive to attain the academic levels they actually see the older children achieving.

Several other studies have found inconsistent effects of multi-age groupings on cognitive outcomes (Martin & Pavan, 1976; Gutierrez & Slavin, 1992), including a meta analysis in which the overall effect size was zero (Veenman, 1995). Pavan (1993) on the other hand claims from her analysis of research that comparisons of graded and multi-age schools using standardised achievement tests continue to favour multi-age. Drawing on sixty four published research studies Pavan (1993, p. 53) notes that, "the results on academic

achievement demonstrate that fifty eight percent of the studies have multi-age students performing better; thirty three percent the same; and only nine percent worse than graded students” (p. 53).

2.4 QUESTIONS RAISED BY THE RESEARCH ON MULTI-AGE

It could be argued from this review of the comparative literature on the different impacts of the two systems that the evidence is at best equivocal. Indeed several researchers (Veenman, 1995; Guttierrez & Slavin, 1992; Pavan, 1992) have been prepared to propose why this may be so. Veenman (1995) for example argues that several factors may help explain why it seems unlikely that the multi-age groupings alone will affect student learning:

At present the instructional practices found in multi-age classes are poorly understood. In fact, most studies provide no information whatsoever on the instructional practices employed in the classroom. Future research should examine not only the effects of different forms of organisational grouping but also the processes by which these effects are brought about... teachers in multi-age are ill-prepared to teach two or more grades at the same time. Inadequate training and teaching materials may strengthen the negative attitudes of teachers towards multi-age teaching and help maintain the single-age as the norm for educational practice (p. 370).

These considerations were also alluded to by Martin and Pavan (1976) when they noted:

It must be kept in mind that in cases where homogeneous or multi-age groupings are related to differential outcomes the curriculum has often undergone substantial modification of teaching methods, materials and other variables which affect the teaching/learning process (p. 313)

From the literature reviewed thus far it is clear that there are still questions to be answered about the many factors impinging on the effective implementation of a multi-age approach to teaching, learning and social relations. The observations above (Martin & Pavan, 1976; Veenman, 1995) and those similarly made by others (Buston, 1978; Pavan, 1992; Gutierrez & Slavin, 1992; Mason & Burns, 1996) raise the question as to whether the absence of clear educational advantages for multi-age is partly due to the "clash of cultures" represented by conventionally trained teachers and multi-age policy and practice. They also highlight the significant lacuna in the literature on multi-age which fails to address the impact such groupings have on the thinking and practices of individual teachers. As was noted earlier there are substantial differences between multi-age and conventional approaches to primary education (Pavan, 1992; Mason and Burns, 1996; Fogarty, 1993; Anderson, 1993; Connell, 1987). My proposal is that these differences can be thought of as a difference in underlying beliefs. This approach has the advantage that it allows ready comparison with the belief systems of individual teachers and hence provides a possible framework for understanding the tensions between school policy and practice and individual teacher's practices.

The next section will examine the concept of teachers' practices and the importance of beliefs in defining these practices. It will be claimed that the ill-structured nature of the many problems encountered by teachers in educational settings results in teachers' beliefs playing a major function in defining tasks and selecting appropriate strategies. Unlike other forms of knowledge, it will be argued that the notion of belief systems can be flexibly applied to new dilemmas prompted by contexts such as multi-age.

2.5

UNDERSTANDING TEACHERS' PRACTICES

In recent years there has been considerable theoretical and empirical research devoted to the understanding of teachers and their classroom practices (Shavelson & Stern, 1981; Clark & Peterson, 1986; Day, Pope & Denicolo, 1990; Nettle, 1998; Hamachek, 1999). For the purposes of this study it is argued that a potent and defensible means for

understanding how teachers make sense of the tasks and challenges that confront them daily is through the construct of teachers' beliefs. This is consistent with an ever increasing body of educational research (Pajares, 1992; Nespor, 1987; Kagan, 1992; Hand & Treagust, 1994; Fang, 1996), which recognises that a teacher's cognitive and other behaviours are guided by and make sense in relation to a personally held system of beliefs. As Thompson (1992, p.129) notes when placing this development in historical context:

Research in teaching began a shift in the 1970s from a process-product paradigm, in which the object of study was teachers' behaviours, to a focus on teachers' thinking and decision making processes... The shift of focus to teachers' cognition, in turn led to an interest in identifying and understanding the composition and structure of belief systems (p. 129).

However, in making a case for the primacy of teachers' beliefs there are many concepts and relationships to be considered, as the following overview highlights. What will be stressed is that the concept of beliefs has a significant and primary role in understanding the personal meaning with which teachers imbue their practice. This is particularly so when teachers are confronted with contextual and innovative situations which challenge their existing beliefs. This approach to understanding the world of the teacher is pertinent to the central tenet of this study which is to investigate how teachers' practices hinder or enhance the implementation of a multi-age approach in a particular educational setting. It will be argued that beliefs capture the notion of the teacher as a person and provide the framework within which knowledge, skills, mental processes and dilemmas are integrated by personal themes.

Initially, the study will investigate the variety of interpretations that have been adopted by educational researchers to explain the knowledge base that teachers call upon when operating within educational contexts. This knowledge base will include the different ways of knowing that are important for teachers and integral for successful practice. However, it has also been well documented that teachers call upon their own interpretative frameworks

to make sense of the dilemmas and challenges that confront them. Berliner (1987) for example suggested teachers have an elaborate schema and a repertoire of scripts that they call upon to interpret problematic situations. Barnes (1992) preferred the term frame to refer to the clustered set of standard expectations through which teachers organise their knowledge. These frames of reference are complex and multi-dimensional and also feature a degree of integration and internal consistency. Leinhardt (1988), on the other hand, used the notion of routines to explain how teachers order complexity.

Significant and useful as these insights are in explaining teacher practice, it will be argued that a more appropriate way of investigating why teachers choose one course of action in preference to others is through the construct of teachers' beliefs. It will be proposed that the concept of teacher beliefs provides a suitable framework for explaining how teachers negotiate the different dilemmas that are presented in the daily routines of the classroom. This is particularly evident in the way in which beliefs filter the knowledge considered appropriate to use in the classroom and in providing a frame for interpreting the challenges that emerge. The connection between teachers' beliefs and practices is an essential element in this study as it can assist in understanding how teachers can facilitate or hinder the implementation of curriculum initiatives such as multi-age.

The beliefs highlighted in the review will be organised under the headings that emerge from the literature, followed by a consideration of factors that can influence beliefs. Included in this analysis will be an examination of the nature of beliefs and how belief change can depend on the core/peripheral nature of beliefs and on the experiences that shape and continue to shape these beliefs. This analysis of the factors that can influence teachers' beliefs will lead to the notion of orientations which are thematically interdependent sets of beliefs which tend to support each other when dilemmas or challenges are confronted. It will be proposed that a useful means of considering orientations is one that has emerged from the data obtained in this study.

2.6

TEACHERS' KNOWLEDGE AND THINKING

In coming to an understanding of teachers' practice there are several factors that need to be considered. One that has attracted increased attention over the last two decades is the significance of teacher's knowledge and how it impacts on teachers' thinking (Kettle and Sellars, 1996; Donmoyer, 1996; Lyons, 1990; Winitzky, Kauchak & Kelly, 1994). Despite much research and scholarly writing on the concept of teacher knowledge and thinking, it still remains an area that is not well understood and much contested (Calderhead, 1988; Johnston, 1992; Chen & Ennis, 1995). This debate has become evident as researchers attempt to understand the function that formal or propositional knowledge and practical or procedural knowledge plays in determining the practices of teachers in educational settings. This confusion is also reflected in the myriad of interpretations that have been attributed to the concept of teachers' knowledge by educational researchers as they attempt to unravel its role in determining teachers' practices. For the purposes of this study it is acknowledged that teachers draw on various forms of knowledge when making decisions about teaching and at this stage of the debate there does not appear to be a consensus in the literature as to how the various forms of teacher knowledge are interconnected.

Forms of Teacher's Knowledge – An Area of Debate

Anderson (1985), for example, has argued that practical knowledge emerges from the repeated implementation of procedures that follow from formal or propositional knowledge. This approach has traditionally been adopted in teacher education programs as it is understood that there are vital knowledge bases that must be developed in student teacher; knowledge of subject matter, curriculum, materials, teaching methods and children, for instance. This model, as a result, assumes that all practical knowledge is derived from formal knowledge as the latter is put into practice. Other researchers (Grossman & Richert, 1988; Shulman, 1987; Leinhardt & Smith, 1985) have attempted to make a shift away from this proceduralisation of formal knowledge through research on

pedagogical content knowledge, which has an emphasis on how teaching is organised and how the school curriculum is translated into classroom practice. Still others, in seeking a broader perspective on teacher knowledge, have focused on the area of practical knowledge, basing their argument on recent research which indicates that teachers require much more than propositional or formal knowledge. These researchers argue that teachers acquire 'know how' or 'on-the-job' knowledge which cannot be traced to prior propositional knowledge (Calderhead, 1987; Foss & Kleinsasser, 1996).

The Significance of Teachers' Practical Knowledge

Practical knowledge within this area of research refers to the knowledge teachers use in the classroom situation, with an emphasis on the complexities of interactive teaching and thinking-in-action and thus is understood as being built on-the-job and generally does not involve the conversion of formal knowledge into a practical form (Carter, 1992; Calderhead & Robson, 1991; Johnston, 1992). A variety of terms have been used to describe this form of practical knowledge, such as folkways of teaching (Buchmann, 1987), wisdom of practice (Shulman, 1987; Leinhardt, 1990), practical knowledge (Elbaz, 1983), personal practical knowledge (Connelly & Clandinin, 1988; Burroughs-Lange, 1994; Golombek, 1998) and craft knowledge (Battersby, 1981; Tom & Valli, 1990). Schon (1987), in arguing for a non-technical approach to understanding teachers' practices, uses the term 'knowing-in-action' to describe the professional knowledge that practitioners actually use:

Knowing-in-action refers to the sort of know-how we reveal in our intelligent action. This knowing is in the action. We reveal it by our spontaneous skillful execution of the performance, and we are characteristically unable to make it verbally explicit (p. 25).

As this practical knowledge often seems to remain implicit and tacit, because most teachers do not systematically convert formal knowledge into a practical form, attempts have been undertaken by educational researchers to make it explicit, so as to uncover the

processes, incidents and experiences that have influenced and continue to impact on its development and usage (Elbaz, 1983; Connelly & Clandinin, 1988; Johnston, 1992; Halliwell, 1992; Darling-Hammond & Cobb, 1996). What the research has revealed is that the process which assists teachers to give meaning to their experiences is shaped by a number of influences. For example, it has been noted that the challenges and dilemmas which confront teachers in educational settings can act as salient stimuli in developing their practical knowledge (Fullan, 1992; Kilbourn, 1993; Provenzo, McClosky, Kottamp, & Cohn, 1989; Lyons, 1990; Hand & Treagust, 1994). By facing these complexities and 'coping' (Lampert, 1985) with cognitive demands of teaching, teachers develop 'practical arguments' (Fenstermacher, 1986) that derived from their classroom decisions and actions (Carter, 1992). How this conversion of practical knowledge into articulate forms occurs has also become an area of contestation as it appears that a majority of teacher do not systematically convert their practical knowledge into formal conceptual knowledge. This fact has been highlighted in the ongoing debate on the nature and function of reflection and reflective practice (Silcock, 1994; Smith & Hatton, 1993; Raymond & Santos, 1995; Schon, 1983, 1987).

The Function of Reflection and Reflective Practice in Shaping Teachers' Practice

What seems to be revealed in this literature is that reflection may be a useful way to effect conversion of practical to formal knowledge, although its value for teachers' practices and its impact on action have been questioned (Day, 1993; Griffiths & Tann, 1991). This is partly due to the fact, as Barnes notes (1992), that teachers have to teach and to make choices whether or not they have a clear sense of where they are heading. Because teaching is highly interactive and contextualised teachers cannot easily afford the luxury of reflection on the choices they are making. This can only come later in whatever tranquility a busy life makes available. Even then the value of reflective practice has been questioned by several educationalists (Tabachnich and Zeichner, 1991; McDiarmid, 1994; Wubbels & Korthagen, 1990; McNamara, 1990) who challenge the notion that teachers' actions are necessarily better just because they are more deliberate and intentional. What is required

then is a framework for understanding why teachers opt for certain approaches to teaching and learning and why they respond in a personal and idiosyncratic way to the challenges and dilemmas of educational contexts? It will be the aim of the next section to address this question by investigating the role of beliefs in filtering the way in which teachers interpret and reflect on their knowledge and experiences.

What has been noted so far is that it is not entirely clear how teachers acquire their practical and professional knowledge from the range of experiences they encounter in educational settings. What is clear however, is that in the day-to-day routines of the classroom the teacher is necessarily establishing priorities by drawing on vast inventories of knowledge about a whole range of areas. The significance of this base of knowledge for teaching is evident when investigating the notion of teacher expertise.

Knowledge Use by Expert Teachers

Researchers investigating the difference between expert and novice teachers have found that experts interpret classroom events differently, integrating seemingly dissimilar events into understandable and coherent knowledge structures. Borko, Bellamy and Sanders (1993) in their study of expert and novice teachers, for example, found that the expert teachers were able to teach in a manner that was flexible and responsive to the cues about student understanding. Borko et al. concluded (1993. pp. 67-68) that the different patterns of strength and weaknesses shown by the novice teachers corresponded to differences in their knowledge systems and pedagogical reasoning skills. In their study one novice teacher was found to have strong content knowledge, but his pedagogical knowledge and pedagogical content knowledge were quite limited. This was demonstrated through his inability to work successfully with a large group and at times seemed unaware of the large number of students off task. Similar findings have also been encountered by others (Berliner, 1987; Mayer, Cornford, Marland, & Olsen, 1994; Clark & Yinger, 1987).

Expert teaching then appears to be firmly grounded in a knowledge base that consists of formal knowledge and experience, which still remains adaptable to situations that are conceived of as having similarities to and differences from what is known. However, the residual questions that need to be addressed are why expert teachers and teachers in general come by and value certain knowledges, why they engage in certain subjective interpretations of classroom processes and not others, and why and how they engage in the process of change.

In a general response to these questions it is being proposed, at this stage, that teaching expertise may be considered as a set of dispositions or personal themes. This response is consistent with a growing body of research (Munby, & Russell, 1989; Barnes, 1992; Lampert, 1985; Gudmundsdottir, 1990) which suggests that it is more useful to consider teachers' construction of their work in terms of dispositions or the personal frames they impose on the situations they face. These dispositions or frames, unlike knowledge are value laden, idiosyncratic and dynamic influences on the teacher's choice of content, pedagogical strategies and their perceptions of students' instructional needs. For the purposes of this study, it is being proposed that these dispositions or frames are best captured through the concepts of beliefs and belief systems, as understood in the literature (Kagan, 1992; Nespor, 1987; Pajares, 1992). As beliefs and belief systems appear to be essential in filtering and framing the knowledge and thinking teachers use in their educational contexts, a further review of the scholarship in this area is required.

2.7 TEACHERS' BELIEFS AND HOW THEY MAY BE DEFINED

Several broad categories have been used to understand how beliefs and belief systems influence teachers' practice, and the literature will be reviewed using these categories as a framework. Recurring issues will be the ways in which beliefs become interconnected into relatively coherent belief orientations, the extent to which orientations adapt to prevailing circumstances, and the role of personal biography and experience in the development of beliefs and belief orientations. Of particular interest to this thesis will be the likely influence

of a multi-age school environment on the beliefs and practices of traditionally trained teachers.

In the following sections it will be noted how the construct of teachers' beliefs and belief systems is broad and encompassing and for research purposes has been refined into more specific dimensions (Pajares, 1992; Fang, 1996). Examples that will be addressed include teachers' beliefs about self, the nature of knowledge, teaching and learning and change. It will be noted that the beliefs teachers hold impact both their perceptions and judgements, and that these in turn affect their behaviour in the classroom. Further, these beliefs are an essential part of improving both professional preparation and later, teaching effectiveness.

Self-Defining or Personal Beliefs

The significance of beliefs that teachers have about themselves as persons has been the focus of a number of studies (Nias, 1987; Triandis, 1989). Several (Nias, 1989; Griffiths, 1993; Borich, 1999) have noted the problem of how to conceptualise the 'self', particularly when investigating how and why it is difficult to alter or change. Mead (1934) argued that the concept of self is both a social product, shaped by the responses of others, and an independent actor capable of initiating actions and acting on them. For Mead then, the self is constructed through an ongoing process that will continue throughout the life of the individual and the social group to which the individual belongs. Katz (in Nias, 1989) suggested that each individual develops an inner self or core through contact with significant others. Ball (in Nias, 1989) used the term "substantial" to distinguish this inner core, which he argued, is persistently defended and highly resistant to change. It comprises the most highly prized aspects of the individual's self-concept and the beliefs which are salient to them. Commenting on this Nias (1989) noted that the personal concerns of teachers were all expressions of the individuals' needs to preserve their identity or substantial self within their teaching community. The importance of maintaining this sense of substantial self was a priority, "as this embodies self-defining values and

beliefs" (p.25). However, these beliefs about self as a person and a teacher, though are often hard to detect and reach, because they may travel in disguise, such as in episodes, experiences, images, metaphors or dilemmas (Pajares, 1992).

Images as a means of Understanding Self

Several researchers (for example Connolly, & Clandinin, 1988; Halliwell, 1992; Johnson, 1994; Calderhead & Robson, 1991) have called upon the notion of image to uncover the self-defining or personal beliefs teachers have about themselves, about what are the "correct" ways of teaching, about what an ideal teacher is, and about how a lesson is typically run. The concept of image will be of particular significance for the purposes of this study, for as the literature highlights, images derive their utility from the ease with which teachers can report them and as a consequence reveal themselves and their beliefs.

Johnston (1992) in her study of teacher's practices in innovative settings found that the self defining images they called upon played a significant part in understanding the personal nature of their actions. As she concludes:

Finally, images are useful in studying curriculum decision making because they focus on the teacher as a person. Images, first and foremost, allow us to study the teacher as a person and there is much evidence to suggest this is where to find the key to all aspects of teaching practice. Images are the personal statements in which the individual features as the main actor (p. 253).

Nias (1989) for example in her investigation of teaching as a personal activity found that the images of the primary teachers she worked with defined how they understood themselves as persons and as professionals. These teachers she noted chose teaching because they felt they could "be themselves" in the primary classroom, or to put it another way, as teachers, they could live consistently with their beliefs and values. These beliefs

about how they viewed themselves and their role were reflected in images which pictured themselves as religious, political or humanitarian crusaders. For example, "I see myself as a crusader"; "I can only go on if I feel I am a missionary."

In addition Nias (1989) also found that almost all of her interviewees expressed a deep concern for the welfare and interests of children. This they normally described as "caring" though sometimes their emotions were more strongly expressed. These beliefs about themselves, as Nias (1989,p.15) noted, were well defined and established before they entered the teaching profession, the significance of which will be raised soon. Janesick (1982) found, in her case study of one particular primary school teacher in an urban classroom, that the image he had of himself was implicated in all aspects of his practice. The teacher, Ken, saw himself as "father and mother to them... we're like a family." The group as a consequence exhibited the characteristics of a small, communal family. Cooperative activities were the norm in the class whether in the realm of instruction, field trips or special programs. Janesick (1982, p.183) also found that the students' reliance on the leadership of the teacher was clearly like the reliance of family members on a family leader. Janesick (1982, p.186) concluded that by identifying Ken's personal and self-defining beliefs about himself she was able to understand how he gave meaning to the day-to-day events in his classroom and how he constructed the curriculum.

However, as has already been implied, these self-defining beliefs also interlock with other core beliefs that influence a teacher's thinking and practice. Several researchers (Lyons, 1990; Webb & Blond, 1995; Hollingsworth, 1989; Richardson, 1996; Glasson & Lalik, 1993; Prawat, 1992) have highlighted the influence of teachers' epistemological beliefs on the knowledge that they consider is important, and on how they present subject matter and interpret students as knowers.

Teachers' Epistemological Beliefs

In reviewing the literature on the significance of teachers' epistemological beliefs for their teaching of mathematics, Ernest (1989) identified three broad views or dispositions. First there is a dynamic, problem driven view of maths as a continually expanding field of human inquiry. Maths is understood as an unfinished product and open to revision. Second there is an understanding of Maths as being a static and unified body of knowledge, one in which maths is discovered, not created. This Ernest described as a Platonist view. Finally there is the view (instrumentalist) that maths comprises a loose collection of facts, rules and skills. These broad dispositions or orientations to maths have been confirmed by a number of studies. Thompson (1984; 1992) investigated the epistemological beliefs held by three junior high school maths teachers. She found that there were consistencies between the teachers' professed beliefs of maths and their practice in the way they typically presented the content. For example, Lyn, whose orientation to maths could be described as instrumentalist, taught in a prescriptive manner emphasising teacher demonstration of rules and procedures. Jeanne on the other hand believed that it was her responsibility to direct and control all classroom activities. Her orientation to maths could be classified as Platonist, because she viewed maths primarily as a coherent subject consisting of logically interrelated topics which emphasised the mathematical meaning of concepts and the logic of mathematical procedures. Kay who espoused and practised a problem solving orientation to maths believed that the teacher must create and maintain an open and informal classroom atmosphere to ensure students' freedom to ask questions and express their ideas. It could be inferred from Thompson's study that a teacher's epistemological beliefs, perhaps more widely cast than for one subject area, may provide a guide to classroom instruction and thus be interrelated with beliefs about the teaching and learning process.

Beliefs about Teaching and Learning

Brickhouse (1990), when investigating the effect of teachers' beliefs about the nature of science on their classroom practice, found that the teachers' views of how scientists construct knowledge were consistent with their beliefs about how students should learn science. In his studies, one teacher's beliefs about the role of scientific theories in making sense of observations were related to her expectation that students should use theories to explain their observations. It was found that these students were excellent problem solvers and tended to view physics as a problem solving activity. Another teacher, on the other hand, viewed science as a gradual accumulation of facts and concepts and, correspondingly it was found that the students rarely asked questions and when they did the questions were nearly always procedural in nature.

Glasson & Lallik (1993) investigated the use of the Language-Oriented Learning Cycle, an interactive, spiral instruction model, on the beliefs and practices of six high school science teachers. One physics teacher (Martha) is illustrative. At the start of the twelve month study Martha expressed the view that the goal of science instruction was for students to arrive at a scientifically acceptable conclusion. This was evidenced within her classroom practice through the dominant use of teacher talk and students working on solving well-structured problems. As Martha explored social constructivist teaching, she gave the students increasingly more opportunities to test and discuss their ideas during problem solving. She gave the students more opportunities to explore divergent problems, using manipulatives in collaborative groups. However, the transition from one orientation to another was not without its tensions. For example, Martha expressed some dissonance between her efforts to give her students opportunities to develop their own understanding and her efforts to present scientific information. She also became dissatisfied with the existing grading system because it lacked the flexibility for rewarding the creative expression of student ideas. Martha's characterisation of her own learning as "incomplete metamorphosis" suggests her awareness of the importance of her own beliefs about learning.

Similar findings concerning the interdependence of teachers' epistemological beliefs and their beliefs about teaching and learning have been highlighted in such diverse areas as history (Wilson & Wineburg, 1988), Maths (Stipek, Givvin, Salmon, & MacGyvers, 2001; Ernest, 1989; Foss & Kleinsasser, 1996), science (Brickhouse, 1990), literature (Grossman, 1992), retention in primary schools (Smith & Shepard, 1988), second language teaching (Johnson, 1992) and assessment (Shepard, 1991).

It might also be assumed that teachers' self-defining and epistemological beliefs will be interconnected with their beliefs about their own professional development and learning. Such relationships are of particular significance for this study because it is being proposed that teachers' beliefs can play an important role in hindering or enhancing the implementation of innovative ideas and programs such as multi-age.

Teachers' Beliefs and Professional Development

There is a growing body of research focusing on how teachers' beliefs influence the uptake of professional development programs (Butler, 1992; Rich, 1990; Weinstein, 1990; Kettle & Sellars, 1996; Goldsmith & Shifter, 1997) and how the emerging dilemmas that may result are filtered and made sense of (Butler, 1996; Hatton & Smith, 1995; Wubbels & Korthagen, 1990). It is in this context that beliefs can provide a possible insight into why some teachers are more predisposed than others to reframe the problematics of practice. Prawat (1992, p.357), drawing on recent research on conceptual change, has argued that for change in beliefs to occur, teachers must go through three steps:

1. They must be dissatisfied with their existing beliefs in some way:
2. They must find alternatives both intelligible and useful in extending their understanding to new situations; and
3. They must find a new way to connect the new beliefs with their earlier beliefs.

Indeed, the process of teachers expressing some tension within their own beliefs and then considering alternative dispositions has been the experience of educators and researchers

involved in professional development programs. They have found that when teachers accept information from outside sources, they filter it through their own personal belief system, translating and absorbing it into their unique pedagogies (Weinstein, 1990; Ennis, Cothran & Loftus, 1997; McDiarmid, 1994)

Teachers' Beliefs and Pre-Service

Several empirical studies confirm that pre-service teachers tend to leave their university programs with the same beliefs they brought with them (Russell, 1988; Kagan, 1992; Johnson, 1994; Hollingsworth, 1989), although some researchers have challenged the generality of these claims (eg., Dunkin, 1995). These prior beliefs also seem to serve as filters through which preservice teachers view and interpret the teaching performance of others. Anderson and Bird (1995), for example, describe three preservice teachers' responses to three cases used in an introductory teacher education course designed to challenge their entering beliefs about teaching. The teacher had hoped that through the study of cases, students would realise that there was more to learn about teaching than they had imagined, and that there are alternative images of practice to those held at the beginning of the term. In analysing the final interviews Anderson and Bird (1995) were interested in the extent to which the images of teaching had changed, suggesting a possible change in beliefs. They found that teachers' entering beliefs about teaching and learning remained central in their interpretation of cases throughout the term and as a result were "seeing as expected." Kay for example emphasised ways in which teachers were obvious leaders in the classroom, spurring pupils to participate actively in lessons; Jessica emphasised how teachers indirectly guided students to think for themselves; and Jill emphasised ways that teachers created interesting experiences that helped pupils feel better about themselves and school. Anderson and Bird (1995) concluded that even when the lecturers expect that a case will provoke a challenge to beliefs because it will seem unfamiliar, students may well interpret it in a way that renders it familiar, even when that requires ignoring or recasting aspects of the case that would otherwise be anomalous to their own experiences and beliefs.

Teachers' Beliefs and Innovative Inservice Programs

It has also been demonstrated that teachers' beliefs have a determining influence on the way that practising teachers interpret and implement innovative programs and curriculum development projects (Rich, 1990; Olson, 1980; Raymond & Santos, 1995; Sahin, Bullock & Stables, 2002). This is particularly so when a fundamental shift in a teacher's belief system is called for. Research (Richardson, 1992; Tillema, 1994; Hunsaker & Johnston, 1992) has shown that where the beliefs underpinning a particular program are not congruent with those of the individual teachers involved, then the success of the project is very limited, and producing change in the teachers' teaching and learning may be a slow, experimental process.

This process of change is well illustrated in Barnes' (1992) description of the introduction of "oracy" into the secondary English curriculum in Britain and with the Language Across the Curriculum movement. Spoken English (oracy) had not previously been a compulsory part of the secondary school English syllabus. The proposed extension to the English curriculum therefore presented most English teachers with a challenge that caused them some anxiety, due largely to the discrepancies between their perspectives and those of the curriculum developers. These differences Barnes (1992) attributed to the diversity of interpretative frames (belief systems) used by the teachers and developers. As he notes, those teachers who can only 'frame' in one way what happens in their classes can only see one set of possibilities for teaching. If such teachers are asked what they would wish to change in their work, they often mention only such external concerns as the time or the lack of resources. The beliefs underpinning a 'singled-framed' approach to innovations, Barnes observed, were reflected in a transmission view of teaching, which inhibited the introduction of the project, particularly in high school settings. The failure was also attributed to the subject-oriented approach to teaching in high schools, where language was by definition the responsibility of English specialists and therefore not of other departments. Similarly, to many teachers the injunctions of the project seemed to threaten the achievement of good examination results and the appearance of a tightly

controlled classroom. However, within the primary sector, the project met a different fate because the beliefs underpinning it were seen by the teachers as being consistent with the notion of talking and writing as a means of learning. Barnes also noted that there were teachers whose beliefs were consistent with the aims of the project, but who were frustrated by a hierarchical and exam dominated system.

Rich (1990) has suggested that for an inservice program to be most effective teachers would need to hold beliefs similar to those contained in the innovations. He used evidence from observations with implementers and in-service teachers to determine what beliefs and goal orientations were important to facilitate effective cooperative learning processes in the classroom. He described the outcomes in terms of two dimensions; teachers' beliefs about knowledge acquisition and their goal orientations. The four quadrants resulting from intersecting these dimensions reflected varying degrees of congruence between teachers' beliefs and the central ideas behind cooperative learning. From the evidence Rich (1990) proposed that teachers' ideological beliefs about education played a central role in determining whether instructional innovations are adopted by teachers and if implementation of the new method is sustained. Based on Rich's work, it might be inferred that innovations are more likely to be implemented effectively and be sustained if there is a high level of congruence between teachers' beliefs and the philosophy underpinning the innovation.

Teachers' Beliefs, Change and Reflective Practice

The question of how and when change in teachers' beliefs takes place still seems to be a challenging one for researchers because the evidence remains inconclusive and thus represents a critical gap in the literature (Kagan, 1992; Kobayashi, 1994; Richardson, 1996). It will be one of the aims of this study to investigate this phenomenon further.

Guskey (1986) for example has suggested that a change in belief follows, not precedes, a change in behaviour. This research suggests teachers change beliefs as they identify

changes in student behaviour, achievement or attitudes that are attributable to the innovation. However, as Richardson, Anders, Tidwell and Lloyd (1991) note, this may be the case for some teachers and beliefs, but not others. In the case of one teacher in their study, for example, it appeared that changes in belief were preceding changes in practice.

What seems to emerge from the research on the influence of teachers' beliefs on professional development and change is that teachers need considerable help in identifying the mismatch between their espoused beliefs and practices and to think through those inherent in new initiatives. This has become increasingly evident through the move towards reflective practice as a means of assisting teachers to uncover their own personal theories and make them explicit. An essential element of this approach is the provision of opportunities for teachers and prospective teachers to reveal their belief orientations, to test them against the social context concerned, and to reframe their beliefs, whether privately or in a peer learning situation. It is not the intention at this stage of the study to engage in an in-depth analysis of the ongoing debate surrounding the notion of reflective practice. However, along with others (Russell & Munby, 1991; Tabachnick and Zeichner, 1991; Butler, 1996) it is acknowledged that it is a complex issue permeated by many and often conflicting definitions and concepts.

There does seem to be a consensus though that teachers are called upon to deal with on-the-spot professional problems as they arise, which involves simultaneously reflecting and doing (reflection-in-action), and also reflecting on the emerging dilemmas and challenges over an extended period of time (reflection-on-action) (Schon, 1983; 1987). It is during these times of reflection that professionals are presented with the challenge to frame and reframe the often complex and ambiguous problems they are facing, test out various interpretations, then modify their actions as a result. It is during this process of reflection that it appears the significance of teachers' interpretative frames or beliefs emerge as an essential element in determining the outcome of the reflective process. Put another way, teachers will adopt an approach to reflection (reflexive beliefs) that is consistent with their

self-defining and educational belief orientation and these beliefs are interdependent and interactive. Research evidence is mounting to support this proposal.

Several researchers have proposed that orientations to reflection and teaching practice represent fundamental beliefs about the self and education (Butler, 1996; Wellington, 1996; Beyer, 1991; Kemmis, 1983). Many of these approaches to reflection and practice draw on the work of Van Manen (1977) and Habermas (1972) who claim that reflecting on practice calls for the ability to apply singly or in combination qualitatively distinctive dispositions to reflection within a given situation. This has led some researchers to claim that teachers' belief orientations will not necessarily benefit from a program of reflective practice. Kothargen (1988), for example, found that some teachers possessed an "external orientation" to reflection in that they expected to be told how to teach and for others to evaluate and direct their teaching. Others possessed an "internal orientation" in which their beliefs about learning were consistent with an approach to reflection that was self-directed and open to the possibility of creating alternative methods of action.

Wellington (1996) also found from his research and review of the literature that it was possible to isolate five orientations to reflective practice; the immediate, the technical, the deliberative, the dialectic and the transpersonal. Each orientation he noted represents fundamental beliefs about education which are interactive and interdependent. He also found that it was possible to categorise the orientations into two further groups, those who engaged in little or no reflective practice, and those who engaged in either domesticating or liberating reflective practice. The domesticating orientation, which includes the technical and deliberative variants is based on beliefs which see schooling as an appropriate and proper vehicle by which the dominant culture replicates itself. Within the liberating orientation on the other hand, individual needs take precedence over societal needs and thus practitioners believe education should either be culturally or personally transformative. It could be conjectured that a teacher's ability to 'move outside the framework' of their beliefs may depend substantially on whether they are 'domesticating' in character, or 'transformative.' From the extant literature (Pajares, 1992; Butler, 1996; Pennell &

Firestone, 1996; Yerrick, Parke, & Nugent, 1997) it appears that evidence for substantive change in teachers' beliefs is scant, most studies emphasising resistance to change.

Available literature suggests the generalisation that teachers' beliefs frame their practice and that these beliefs are generally resistant to change (Pajares, 1992; Munby, 1982; Wagner, 1987; Yerrick, Parke, & Nugent, 1997). This raises questions about shifts in beliefs. The next section will review the literature addressed to these questions. Included will be the influence of contexts on teachers' beliefs and also the episodes and experiences (dilemmas) which constitute a teacher's personal biography and the memory of these experiences.

2.8

FACTORS INFLUENCING TEACHERS' BELIEFS

This section commences with a review of the influence of context on the beliefs and practices of teachers, with particular reference to the culture of schools. What will be highlighted is that teachers' beliefs filter, yet become framed by, the cultural setting of the school. A second set of factors that can influence beliefs are those related to a teacher's personal biography, that is their significant episodes, experiences and dilemmas.

The Culture of Schools

While it has been acknowledged (Craven, 1998; Nespor, 1987; Rich, 1990) that the study of beliefs is important to the understanding of a teacher's actions and choices in the classroom, there is a growing body of research (Sachs & Smith, 1988; Barnes, 1992; Triandis, 1989; Hamilton & Richardson, 1995) which argues that teachers' beliefs should be studied within a framework that recognises the influence of culture. The importance of doing so is acknowledged by Olson (1988, p. 69); "What teachers tell us about their practice is, most fundamentally, a reflection of their culture and cannot be properly understood without reference to that culture." The significance of culture in influencing the beliefs and practices of teachers flows from the essential nature of culture itself. The term culture is used here to signify, "those collective interpretations of social and material

experiences that are more or less shared by members of a group” (McLaughlin 1993, p. 82). Culture then becomes a screen through which people view their lives and interpret the world around them. It is within this socially constituted nature of culture that beliefs play an integral role in filtering information and determining what is considered important and to be valued in the group. As Stenhouse (1983, p. 122) explains, culture is about “the capability of the members of a group to act on the basis of a consensus of meanings manifested in linguistic usage and dependent upon a deeper consensus of values and understandings.” The power of culture then is that it can sustain a complex pattern of beliefs, as is often evident for example within a school.

School culture, as the literature also reveals (Zeichner, Tabachnick, & Densmore, 1987; Rudduck, 1991; Hamilton & Richardson, 1995; Sachs & Smith, 1988) can be seen as consisting of a number of diverse cultures which may or may not be congruent with the beliefs of the individual teachers. Much recent research has been directed to studying the influence of school culture on the beliefs and practices of teachers, but as will be seen it is often not clear who will dominate or which beliefs and practices are compromised so that teachers can function adequately. Nevertheless, a review of the literature on how school culture influences teachers’ beliefs and practices does provide a useful foundation for determining why some teachers fit comfortably into particular school cultures and why some people adopt creative ways of adapting to or resisting school culture.

How school culture is understood among educationalists and researchers varies. However, there have been attempts to identify and label particular forms of school culture. The resulting models or “cultural forms” are of interest to this study as they highlight the beliefs that underlie them. It is these beliefs that can clash with the beliefs of individual teachers, thus presenting them with a number of dilemmas. Another significant feature of these orientations to school culture is that they highlight the importance of beliefs about power and control and the way relationships are understood. This approach to culture is consistent with those researchers (Friere, 1985; Popkewitz, 1988; McLaren, 1989) who

recognise that definitions of culture and views of individuals within it are constructions that occur in relation to structures of power and issues of dominance.

Several educationalists (Rizvi, 1989; Grundy, 1989; Bullough, 1987; Zeichner, Tabachnick, & Densmore, 1987; Day, Pope, & Denicolo, 1990) have claimed that the prevalent culture within schools is based on beliefs emerging from a technical, bureaucratic orientation which emphasises impersonal bureaucratic control and hierarchical social relations within the school context. Hargreaves (1994) for example describes one particular form of this orientation as “contrived collegiality.” He notes that the beliefs that underpin this form of school culture are exemplified through structures which stress compulsory collaboration, predictable outcomes in curriculum development and high levels of administrative regulation. In contrast other forms of school culture have been identified as being based on beliefs emerging from democratic (Rizvi, 1989) or collaborative orientations (Hargreaves, 1994). Taylor (in Rizvi, 1989, pp. 62-63) describes a democratic school culture as one in which the members are able to negotiate the beliefs and values by which they live and work together and in which the relations among members should be non-manipulative, direct and characterised by mutual aid and sharing. Hargreaves (1994) considered a collaborative school culture as one underpinned by relational beliefs that extend across the whole school. These beliefs, he elaborated, are demonstrated through improved communication, shared decision making, mutual trust, creating opportunities for collegial learning and networking with outside environments. He found that relational beliefs within a school emerged primarily from the teachers themselves as a social group. These beliefs were also in evidence as the teachers worked together to develop initiatives of their own, with the aid and support of the administration. When they had to respond to external mandates, they did so selectively, drawing on their professional confidence and discretionary judgment as a community.

These models are important for this study because they highlight the various cultures that teachers are exposed to and the potential they have for creating a clash of beliefs. Indeed much of the research (Day, Pope, & Denicolo, 1990; Hargreaves, 1994; Day, Calderhead

and Denicolo, 1993; Carr, 1989; Hamilton & Richardson, 1995) has sought to understand the various responses that individual teachers make when confronted with these cultural settings, particularly when there is a press for change in beliefs and practices. As the following brief review of this literature demonstrates, the reaction of individual teachers is often personal and idiosyncratic. Reasons why this may be so and the implications for this study will then be further examined. It will be proposed that school culture may either be compatible with or in conflict with teachers' beliefs. For those teachers whose beliefs may be compatible with the school culture, assimilation of culture to beliefs takes place. Alternatively where school culture may be in conflict with teachers' beliefs there may either be a change in beliefs by compliant adopters in which there is accommodation of beliefs to culture, or outright rejection by obstructionists, or partial assimilation and partial accommodation by pragmatic sceptics (Doyle and Ponder, 1997).

School Culture and its Influence on Teachers' Beliefs and Practices

When confronted with a school culture that is grounded in a strong sense of hierarchical power, teachers have often been found to conform and pursue a minimalist policy, defending themselves against the possibility of criticism by working very closely to guidelines and avoiding individual experimentation (Barnes, 1992; Feiman-Nemser & Floden, 1986; Ernest, 1989). Others have been observed smuggling elements of unstructured practices into an administratively imposed program that reflects a structured view of teaching and learning (Rizvi, 1989; Bullough, 1987; Clark & Peterson, 1986; Sachs & Smith, 1988). This approach to adapting to bureaucratically controlled school cultures is often made possible by the isolated nature of teaching and the security and pseudo-autonomy teachers can find within their own classrooms (Feiman-Nemser & Floden, 1986; Barnes, 1992; Day, Calderhead, & Denicolo, 1993; Zeichner, Tabachnick, & Denscombe, 1987). However by creatively adapting to institutional life, rather than critically reviewing it, teachers may leave their own beliefs and practices unchallenged (Smyth, 1989; Beyer, 1991; McLaren, 1989). This is evidenced by a dependency on expert opinion, insecurity and denigration of personal interests coupled with a growing alienation from work.

Several studies have also investigated teachers' responses to innovations and the consequent press for change in beliefs and practices. These have often come from different sources and cultural orientations. Barnes (1992) for example described one school where school culture had been deliberately manipulated to influence teachers' beliefs and practices. The culture of self-efficacy was expected from all teachers and students in order to improve themselves through effort and self-esteem. Within the school some staff went along with the culture only in a superficial sense – they could “talk the talk but not walk the walk.” Other staff members however found that their beliefs about professional responsibility and practice were reinforced. Similar findings were observed by Calgren (1990) who noted that externally generated innovations were often “distorted” by teachers in order to comply with their own beliefs and intentions, and consequently changes were only at a surface level.

Several researchers have found on the other hand that a collaborative school culture can facilitate the development of change within individual teacher's beliefs and practices (Hannay & Seller, 1990; Hargreaves, 1994; Day, 1990; Halliwell, 1992). Hannay and Seller (1990) for example observed that school based curriculum development in one school was facilitated when there was a collaborative climate which provided opportunities for teachers to systematically reflect upon their own beliefs and practices. This process resulted in teachers experiencing various forms of modification in their own beliefs and practices. However as Hannay and Seller (1990) noted, modification of beliefs themselves might have to wait until they have implemented the curriculum in the classroom. This observation is consistent with research which suggests that a change in beliefs follows rather than precedes a change in behaviour (Fullan, 1992; Guskey, 1986). The significance of this observation will be pursued later in further discussions on the nature of beliefs.

Categories of Teachers' Responses to School Culture

What has been stressed so far in investigating the influence of school culture on teachers is that particular cultures can shape, modify, facilitate or constrain individual teacher's beliefs and practices. Educational researchers (Cole, 1985; Sparkes, 1991) have described teachers' reactions in related ways. Doyle and Ponder (1977) identified a number of studies that classified teachers as 'rational adopters,' 'stone age obstructionists,' or 'pragmatic skeptics' in the way they responded and reacted to the demands to change practice. They suggest that the first two of these categories have received much more attention than the third. Sparkes (1991) when investigating teachers' reactions to imposed change observed that individuals may define themselves as winners, losers or sideliners. Lacey (1977) found that the primary orientation of teachers when responding to institutional change was one based on either strategic compliance or strategic redefinition. Skelton (1990) added another category, strategic compromise, to explain how teachers in his studies made sense of conflicting situations within the culture of a particular school.

These categories are significant for the purpose of this study in that they highlight the phenomenon of teachers responding in different ways to similar work cultures through either assimilation or accommodation. However what these classifications fail to elucidate is why teachers respond in certain ways. Researchers do not appear to have speculated on the role of beliefs, particularly in drawing distinctions between degrees of belief clash, or between core or peripheral beliefs. Put another way, there is no apparent explanation of the underlying dynamic process teachers call upon when attempting to make sense of the tensions caused by a challenging school culture, particularly when there is a press for change within their own beliefs and practices.

Several researchers (Cole, 1985; Halliwell, 1992) have suggested that the search to understand the dynamics of stability and change within individual teachers might be furthered through studying the 'outliers' or 'innovators.' These are the people who tend to seek opportunities to initiate curriculum developments whatever the particular cultural

orientation of the context in which they work. The value of studying these, Smith and his colleagues (1986) argue, is that 'the individuals who enter into the activity of innovation are different from the run of the mill educators' (Smith, Kleine, Prunty, & Dwyer, 1986, p. 284) because they 'adopt a proactive orientation and seek experiences which support, maintain and enhance their belief systems' (p. 290). Cole (1985) likewise has argued that educational research would be well served by addressing the problem of explaining how individuals with an innovatory orientation cope with structures which are generally regarded as particularly resistant to change.

While it is not the central focus of this study to investigate innovators as such, the observations of Smith et al., (1986) and Cole (1985) are considered relevant for the purposes of this study for two reasons. Firstly they highlight the phenomenon of an individual teacher's practices being shaped by their own belief system; and secondly they emphasise that these belief systems can support and sustain particular orientations, which in turn are indicators as to how teachers may respond in particular cultural settings.

The next section of this study will further investigate the influence of teachers' beliefs by reviewing the literature on teachers' personal biographies.

2.9 THE INFLUENCE OF TEACHERS' PERSONAL BIOGRAPHIES ON THEIR BELIEFS

It has been noted in the literature that a teacher's personal biography and the experiences, episodes and dilemmas which constitute it, play a significant part in the development of beliefs and belief systems (Holt-Reynolds, 1992, 1994; Anderson & Bird, 1995; Weinstein, 1990; Kagan, 1992). It has also been shown that these beliefs are generated over a long period of time through a process of enculturation and social construction and produce richly-detailed belief systems which serve as an inspiration and blueprint for teaching practice (Pajares, 1992; Calderhead & Robson, 1991; Kagan, 1992; McDiarmid, 1994).

Lortie (1975), for example, refers to this process within the school context as an "apprenticeship of observation", or the "vivid memories of 10,000 hours in the classroom that help new teachers determine what they want to be and do in teaching" (p. 160). These experiences also serve principally to reinforce what Buchmann (1987) refers to as the "folkways of teaching," which are "ready-made recipes for action and interpretation that do not require testing or analysis while promising familiar and safe results" (p.161). Learned by "tradition and imitation" and authorised by "custom and habit", folkways provide prospective teachers with orientations that accord with their experience of schools and seem to work (Buchmann, 1987,pp.154-155). As Britzman (1986) explains, prospective teachers:

bring to their teacher education more than their desire to teach. They bring their implicit institutional biographies—the cumulative experience of school lives—which, in turn, inform their knowledge of the student's world, of school structure, and of curriculum. All this contributes to well worn and commonsensical images of the teacher's work (p. 443)

Images as a Means of Revealing a Teacher's Personal Biography

As has been highlighted earlier a useful means for understanding the beliefs of teachers is through the images they use. Goodman (1988) found that these images have been formed from past events and are significant in creating intuitive screens through which new information is filtered. This phenomenon has also been taken up by other researchers interested in uncovering the importance of these biographical influences on the development of teachers beliefs and then in turn to examine how these beliefs (images) determine practice.

Calderhead and Robson (1991) found that student teachers held images of teaching which were mostly derived from their experience in schools as pupils, and that these were often highly influential in their interpretation of the course and classroom practice. The two

researchers followed twelve student primary teachers through the first year of a B.Ed. course using a variety of research methods, including interviews and video-taped evidence from lessons. The interviews aimed to elicit the students' beliefs about the task of teaching, how they came to apply for teacher training, significant biographical details, how they saw themselves as teachers and their ideas about how children learn. One teacher, Harriet, noted that her beliefs and associated images about teaching derived from one of her secondary school teachers. This teacher put a great deal of effort into making classroom work interesting and was tolerant of individual pupils' difficulties. This positive image of the teacher as a person who makes work interesting for children and who is tolerant of their struggles to understand is also linked with Harriet's early experiences of teachers and schooling. These images were negative ones of teachers who were impatient and intolerant and who failed to explain things to her. She recalled feelings of failure and embarrassment and being ridiculed by teachers when she asked for help. As a result of these experiences, Harriet can readily image herself working with small groups of children and being particularly patient with the slow learners. On her school practice, she was particularly attentive to the inabilities of the less able children in the class and is the only student in the sample who, when commenting on the course, talked enthusiastically about Piaget, claiming that her study of Piaget helped her understand why some children cannot do things.

Another teacher, Alison, had an image of teaching based on some fairly formal beliefs derived from helping her mother who was a primary school teacher. Her image of teaching emphasised efficiency; having the classroom well organised, definite routines for the students, and questioning strategies that keep the children involved and thinking. This approach was reflected in the way she undertook her school practice.

Johnson (1994) similarly found when investigating the emerging beliefs and instructional practices of preservice second language teachers that images from prior experiences within formal language classrooms had a powerful influence on the beliefs of themselves as teachers, and on their instructional practices. These images reflected the teacher-

centred approach, the traditional image of the teacher as the source of knowledge and the need to retain authority in the classroom. As Johnson (1994) notes, such traditional beliefs seemed to completely override these teachers' recent images of themselves as student-centred second language teachers.

Research has also shown that experiences, episodes and dilemmas from a teacher's past, including previous careers (Powell, 1996), have been influential in developing their beliefs in areas as diverse as social interactions with students (Weinstein, 1990; Calderhead, 1987), reading (Holt-Reynolds, 1992) maths (Ernest, 1989; Hollingsworth, 1989), history (Wilson & Wineburg, 1988) and science (Glasson & Lallik, 1993).

Belief Experiences Linked in a Familial Way

From the literature then it seems that teachers' prior experiences shape their beliefs. It is also possible that these experiences form beliefs about teaching, learning and social relations into thematic or familial orientations. Thus teachers' images of themselves as a person formed from experiences and episodes within particular cultural settings may also be reflected in the experiences which have shaped their beliefs about the type of teacher they aspire to be, the approaches to learning they will adopt, and the knowledge they value. Indeed it is the interrelated nature of the beliefs and experiences comprising a teacher's orientation to practice that may possibly explain why it is difficult to change a teacher's beliefs. As Pajares (1992) notes:

evaluations of teaching and teachers that individuals make as children survive nearly intact into adulthood and become stable judgements that do not change, even as teacher candidates grow into competent professionals (p. 322).

Put another way, the mutually self-supporting beliefs comprising an orientation may explain why the task of conceptual change is difficult. As has been noted earlier the

transition to new personal understanding of any concept or event is particularly problematic, because pre-existing beliefs are tenacious even in the face of contradictory evidence (Kagan, 1992). It has also been claimed that the earlier a belief is incorporated into the belief orientation, the more difficult it is to alter, because these beliefs subsequently affect the perception and strongly influence the processing of new information (Pajares, 1992; Nisbett & Ross, 1980). The evidence for this resistant nature of teachers' beliefs has been well documented and may explain why preservice teachers tend to leave their university programs with the same beliefs they brought with them (Bird et al, 1993; Kagan, 1992) and why in service programs and curriculum initiatives may not achieve their aims (Fullan 1992; Calgren, 1990; Hannay & Sellar, 1990; Rich, 1990). Moreover, even when a new experience or school culture clashes with a teacher's orientation, leading to an experience of dilemmas (Lampert, 1985; Barnes, 1992; Rudduck, 1991; Halliwell, 1992), there is a strong likelihood that the dilemmas will be resolved in favour of the teacher's existing orientation. It is through the development of an elaborate and coherent set of beliefs—or orientation—that a classroom teacher can take control of uncertainty and ambiguity.

Similar observations apply at the preservice level. McDiarmid (1994) found that challenging preservice teachers' beliefs about teaching and learning by presenting practical dilemmas within the classroom was a frustrating task. In using the image of a spider's web to explain the lack of change in beliefs of the teachers McDiarmid (1994) concluded that:

...the strength of each individual belief about teaching, learning, learners, subject matter knowledge, and context is formidable. Interwoven the strands constitute a web of remarkable resilience; severing one strand barely diminishes the overall strength of the whole (p. 18).

Indeed it is this systemic interwoven nature of teachers' beliefs that may possibly provide the potential for examining why some teachers respond positively to particular curriculum initiatives such as multi-age and why others experience difficulty in making the transition.

The systemic nature of beliefs has been proposed by several theorists (Peterman, 1991; Abelson, 1979; Nisbett & Ross, 1980; Rokeach, 1968). Rokeach (1968) based his analysis of a belief system on three assumptions: Beliefs differ in intensity and power; beliefs vary along a central-peripheral dimension; and the more central a belief the more it will resist change. It is this model which may provide the potential for further investigating the nature of beliefs in educational settings, particularly those which set up a clash of beliefs.

The purpose of this study is to investigate the influence that a contextual setting, based on a multi-age approach, has on the beliefs and belief system of teachers. From the literature reviewed so far, it is possible to infer that teachers' beliefs may be thematically interdependent in the manner implied by the term 'orientation.' However the concept of orientation needs to be further explored, as it provides the possibility for understanding why some beliefs may be more central or important than others and thus hinder or enhance the implementation of innovations such as multi-age.

2.10

ORIENTATIONS

Several descriptive schemes have been developed to elaborate the concept of orientations and thus have the potential for providing a convenient interpretative framework for reviewing the data from this study (Samuelowicz & Bain, 1992, 2001; Pratt, 1992; Fox, 1983; Kemmis, Cole, & Suggett, 1983; Grundy, 1987; Kember, 1997). Even though the task of reviewing the data was undertaken with no fixed preconceptions as to the frameworks which might prove most useful in the multi-age context, it soon became evident that the scheme outlined by Kemmis, Cole, & Suggett (1983) offered an interpretative framework that might be adaptable to my own purposes.

A Framework for Understanding the Concept of Orientations

Kemmis et al. (1983) introduced their notion of orientations in the context of the debate about transition education, particularly as it related to what schools should do to prepare young people for adult life. They argued that all those involved in transition education approached the issues surrounding it with an orientation to education, which in turn influenced the position they adopted in the debate. Kemmis et al. (1983) presented three prespecified theoretical orientations, which they considered encapsulated the broad range of beliefs associated with education: the vocational/neo-classical, the liberal/progressive, and the socially-critical orientation. These orientations are not new and each has its own critical history and literature (Grundy, 1987; Smyth, 1989; Smith & Lovat, 1991). The vocational/neo-classical orientation is one in which education is understood as a preparation for work. Proponents of this orientation hold the belief that education reflects the principles of the wider society and the world is hierarchically ordered, and the best endowed in ability and background will find their way to the most rewarding positions. The liberal/progressive orientation, on the other hand, sees education as a preparation for life rather than work and as a consequence needs to develop autonomous persons who can help reconstruct society through the democratic process of reasoned debate. The socially-critical orientation argues that education must develop the power of constructively critical thinking, not just in individuals but also in group processes.

The Belief Dimensions and Their Constituent Beliefs

Having outlined these three orientations, Kemmis et al. (1983) then nominated eighteen pre-specified beliefs which individuals may hold about education and its role in society. These beliefs were then organised into dimensions. For example, one dimension was the student-learning role. Within the vocational/neo classical orientation the student is seen as a receiver of transmitted knowledge; in the liberal/progressive orientation the student is an active constructor of knowledge through experience and opportunities to discover and enquire; and in the socially-critical orientation the student a co-learner using available

knowledge through interactions with others in socially-significant tasks of critique or collaborative work. Differences between the orientations on another dimension illustrate the internal consistency within each orientation. Within the vocational/neo-classical orientation the teacher is viewed as an authority transmitting knowledge, structuring and sequencing what is known to allow the students to achieve mastery; in the liberal-progressive orientation, the teacher is a “mentor” or facilitator, organising learning opportunities to allow the students to take advantage of opportunities and achieve autonomy; and in the socially-critical orientation, the teacher is a resource person organising critical and collaborative activities in negotiation with students and community.

Unexplored Issues About Orientations

Kemmis et al. (1983) demonstrated, albeit theoretically, that it is possible to conceptualise orientations as consisting of several beliefs that are thematically interdependent and tend to complement each other. Indeed Kemmis et al. claimed that the three orientations “are internally consistent and conceptually distinct,” and that “a coherent view of education cannot be composed of fragments of all three orientations.” These are issues that will be addressed later in this study.

However, there remain several issues about the nature and influence of orientations which are not adequately addressed within the relevant literature. One of these relatively unexplored issues is how the patterns of beliefs within an orientations are held together and whether there is evidence of a focal or dominant core belief which may be ingrained and immutable (Pajares, 1992). Another issue is whether and how orientations either accommodate to or assimilate the contextual pressures that teachers may encounter such as in a multi-age setting. This issue will be addressed by investigating the nature of belief systems and how their interconnected characteristics may explain both their resilience and adaptability when confronted with challenges and dilemmas

The Nature of Belief Systems

In this section two models (Rokeach, 1968; McDiarmid, 1994) will be explored, in which the resilience of beliefs to change is attributed to their interconnectedness. In Rokeach's model, it is argued that the highly interconnected beliefs are more difficult to change and tend to be those beliefs concerned with the self and those shared with other valued persons. In McDiarmid's model, beliefs are said to be resilient because they are uniformly interconnected in a web and hence the whole belief system is resistant to local severance of a connection. It will be noted that the difference between the two models is based on how interconnected the relevant beliefs are, and the possible implications this difference may have for the study will be explored. In particular, attention will be given to the notion of core/ central and peripheral beliefs and how the more 'connected' a belief is the more influential it is likely to be on other beliefs and less likely to wither.

Rokeach (1968) defined a belief system "as having within it, in some organised psychological but not necessarily logical form, each and every one of a person's countless beliefs about physical and social reality" (p.2). The importance of any particular belief Rokeach (1968) explains in terms of connectedness, in that the more a specific belief is connected with other beliefs, the more implications and consequence it has for other beliefs and therefore the more central it is and less likely to change. Rokeach defined four levels of importance:

- existential versus non existential beliefs
- shared versus unshared beliefs
- derived versus underived beliefs
- beliefs concerning matters of taste.

Existential beliefs or beliefs concerning an individual's identity or self, Rokeach claims, are interconnected as are shared beliefs which are beliefs one shares with others concerning one's existence and self identity. These are assumed to have more functional connections and consequences for other beliefs than beliefs that do not concern one's identity or are

not shared with others. Derived beliefs are those beliefs acquired not through actual encounter with the object of belief, but indirectly from reference persons or groups. Finally, Rokeach notes that there is a wide variety of personal arbitrary beliefs which are considered less important in terms of connectedness.

Rokeach (1968) also proposed that clusters of beliefs around a particular object or situation form attitudes. Within this model beliefs within attitudes have connections to one another and to other beliefs in other attitudes. Thus educational beliefs for example must be understood in terms of connections not only to each other but also to other perhaps more central beliefs in the system. It is this interconnected and interdependent nature of beliefs which determines and guides the action agenda of an individual (Pajares, 1992, p. 319).

The notion of such central or core beliefs has also been taken up by other researchers (Peterman, 1991; Nisbett & Ross, 1980). Posner, Hewson & Gertzog (1982) for example, in their research on college students' conceptions of scientific theories, noted the importance of metaphysical and epistemological beliefs as being central when filtering information. They concluded that when metaphysical and epistemological beliefs are deep and strong an individual is more likely to assimilate new information (distort it to fit their beliefs) than to accommodate to it (changing their beliefs), a phenomenon that will be of interest when examining the data from this study.

Another analysis of the nature of belief systems has also been carried out by McDiarmid (1994) who attempted to explain the difficulties involved when challenging prospective maths teachers' beliefs during early field experience. Whereas Rokeach argued that some beliefs are more interconnected than others and hence are more central and resilient to change, McDiarmid proposed that the whole belief system is difficult to change because the beliefs are highly interconnected in a web like fashion. "As one strand of a web supports and is supported by those strands in contact with it, so too prospective teachers' beliefs support one another " (McDiarmid, 1994, p. 13). This image of a web led McDiarmid

to infer that these interconnected beliefs form a particular orientation to teaching which is dispositional in that the belief positions tend to frame all aspects of professional practice in a thematically relevant way. For example the belief that maths consists of routines and procedures is reinforced by understanding that learning maths involves remembering the correct algorithm and that teaching involves giving learning practice to help students remember. These beliefs about subject matter, learning and teaching, McDiarmid (1994) claims, are also interwoven with other beliefs, for example, that listening to other pupils' explanations and ideas is often confusing and that successful teaching can be measured by whether the textbooks or curriculum is successfully covered. These presumptions of McDiarmid concerning the dispositional nature of belief orientations in the area of maths has also been used by Wilson and Wineburg (1988) in history, Thompson (1984) in maths and Brickhouse (1990) in science. When summarising his success in having teachers confront their beliefs as a web rather than as discrete assumptions, McDiarmid (1994) pessimistically concluded that this web like nature of belief systems was formidable, often unreflective and in some aspects downright damaging. As McDiarmid (1994, p. 19) comments, "interwoven, the strands constitute a web of remarkable resilience; severing one strand barely diminishes the overall strength of the whole."

Gains and Losses from the Literature on Belief Systems

Whether belief orientations are best understood as systems of core (highly interconnected) and peripheral (less interconnected) beliefs, or as a uniformly interconnected web of beliefs, what appears to be common ground is that belief orientations tend to be internally structured, self-sustaining and resistant to change. This was the working (but not immutable) assumption of the research reported in this thesis: ultimately the data determined the conclusions to be drawn. Moreover, although I adopted the Kemmis et al framework as the first approximation for my data, I kept an open mind on several important issues:

1. Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientation?
2. How does the multi-age environment influence teachers' beliefs and practices?
3. What aspects of change in orientations arose from the teachers' desires to improve?

These three questions will be used in chapter five to interpret and analyse the data and from which certain conclusions, relevant to the focus of this study, will be drawn.

2.11

SUMMARY

The literature review has assisted me in understanding the potential that the notions of beliefs and belief systems offer for understanding teachers' practices, particularly when teachers are confronted with contexts and innovations which challenge their existing beliefs and practices. The concept of orientation was found to be a construct which could help order the complexities associated with teachers' beliefs and belief systems and therefore provide a platform from which to analyse and discuss the evidence from this study. The literature review also allowed me to define the particular focus of the research which is:

To investigate the interplay between beliefs and practices over a two year period in a school context that is likely to provide challenges and opportunities for professional growth.

It was also possible to draw on the literature review to cast the questions which guided the conduct of the research:

- Question 1 Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientation?

Is a primary vs secondary (core vs secondary) distinction useful when investigating individual orientations?

Question 2 How do the individual orientations frame the teacher's professional practice within the multi-age setting of the school?

Question 3 What are the implications for professional in-service and for the evaluation of complex curriculum initiatives like multi-age primary schooling?

However as has been stressed throughout this study thus far, teachers' beliefs and practices do not occur in a vacuum. The next chapter of this study will provide a description of the contextual features and factors that could impinge on and possibly determine the belief orientations of the teachers who participated in this study.

CHAPTER THREE

THE CONTEXT OF THE STUDY

The purpose of this study is to investigate the interplay between beliefs and practices over a two year period in a school context—based on a multi-age approach—that is likely to provide challenges and opportunities for professional growth. This chapter will present a description of the school at the centre of the study, including a brief outline of its foundation, a profile of the school/ parent population, and an analysis of the development and implementation of its multi-age policies.

3.1 THE FOUNDATION OF THE SCHOOL

St Clares School, Brisbane, commenced operation in 1988. In its initial year, the intake was limited to the pre-year one and years one to three (p-3) and year eight, with the intention that a year level be added to both primary and secondary sections until P-12 year levels were in place. The particular focus of this study is to be the primary section.

The development of the vision of St Clares has been a blend of a pragmatic response to education development in the State, most notably the P-10 Curriculum, and a more philosophical, educational and pastoral rationale. This vision was articulated in a detailed statement by Lambert (1987), the educational officer responsible for the pre-planning of the school. The initial planning was conducted at the time of state-wide discussion on the P-10 curriculum. In conjunction with this educational move, St Clares was also envisaged as a parish-school complex. This vision of a community school grew as a result of the educational and pastoral needs of the region which were identified (Lambert ,1987) as being characterised by a high incidence of :

- unemployment
- single parent families

- low self-esteem
- lack of hope in the future
- lack of community support.

Rundall (1988), another contributor to the initial vision of the school, articulated what were to be two essential concepts underpinning the philosophy of the School as a result of the identified needs. The first of these was the notion of community:

Community: In terms of structure, St Clares is designed as an educational partnership between church, the family and the school. It is intended that the School meet the needs of the community from pre-school through the establishing of supporting and co-operative networks for all ages. In affective terms, the School is endeavouring to provide a welcoming and friendly centre for the families of the region (Rundall, 1988, pp. 3-4). The second concept focused on the notion of individuality:

Individuality: It is hoped that the educational vision of the school will respond to the individual needs of the students by its flexible structure, in contrast to the age-graded concepts which developed as a convenient administrative structure. Thematic and integrated approaches to curriculum are designed to help students make connections and understand the relationship between all knowledge. In this way students are encouraged to pursue knowledge not only for the purpose of making sense of the world but also that they might apply this knowledge to create better futures for themselves and their community (Rundall, 1988, p. 2)

The notions expressed in the statement on individuality and community emerged as an integral component of how the planners envisaged the school would develop. This was evident in the decision to structure the primary section on a multi-age basis. This approach to groupings was outlined as an expectation to the inaugural staff members, and to myself

in particular, when I was interviewed for the position as the educational leader of the primary.

When the school opened in 1988, there was a total of sixty three students in the primary section ranging in ages from five to eight years, or from grade one to three in traditional gradings. These students were allocated to three groups to ensure that the flexibility outlined in the vision statements was maintained. By the time this study commenced in 1993, there were three hundred and sixty three students in thirteen groupings.

A Description of the School at the Time of this Study

At the start of this study in 1993, the school had been in operation for five years and had begun to develop its own particular ethos and practices. This was in part due to the cultural characteristics of the region, as outlined earlier. Within the local community, including the school families, there was a very high proportion of low income people and a high number of unskilled people on supporting pensions and unemployment benefits. Most of the families that moved into the area were quite young, with over 50% of the population under 20 years. There were virtually no professional families represented in the school. In the primary, some 21% of families receive a remission on fees and levies. The levies themselves are low when compared with other Catholic and State schools. This low collection rate was also reflected in other fund raising activities, carried out by the Parents and Citizens Association, to provide classroom resources. As a result of the socio-economic nature of the area many of the students were identified "at risk" (32%) based on the indicators used to ascertain students for the various funding schemes provided by the Commonwealth and State governments. Some 40% of the regional population were born overseas and these figures were reflected in the school population. In addition there was a high proportion of Aboriginal and Torres Strait Island people (5%) and Pacific Island people (27%), especially Tongan, Samoan and Tagalog speakers. The school staff also dealt regularly with child abuse cases in which family services personnel worked with school staff on an ongoing basis. There have also been instances where students have been

taken into care. Finally, the high levels of socially disadvantaged students (50%) placed substantial demands on the time and energy of the teachers, particularly when dealing with behavioural and learning difficulties.

It was within this context that the teachers at the centre of this study implemented a multi-age approach to education consistent with the broad vision statement drawn up by the school community in 1988. The implications of this vision statement for classroom practice were developed incrementally through several significant policy development over the first four years of the school.

3.2 POLICY DEVELOPMENT

Table 3.1 presents a timeline of the significant policies that were developed within the first four years of the school. A full description of these policies and the philosophical platform on which they were developed follows Table 3.1

Table 3.1 Timeline of Policy Development

YEAR	POLICY
1988	The School Vision Statement Learning and Teaching Pastoral Care Groups in a Multi-Age School
1989	Assessment Beliefs and Practices Social Justice Competition
1990	English Definition of the Curriculum Statement on Knowledge
1991	The Integrated Curriculum Cooperative Planning, Learning and Teaching
1993	PhD Project

Beliefs about how Children Learn

Associated with the multi-age groupings was a statement about teaching and learning developed by three initial staff members, including myself. Table 3.2 provides an outline of these beliefs.

Exhibit 3.1 Learning Beliefs

BELIEF STATEMENTS ABOUT HOW CHILDREN LEARN

We believe that children will learn best if the following conditions prevail...

- There is an emotionally secure environment
- The activities that are undertaken are enjoyable
- All including teachers are actively involved
- There is freedom to question
- There is a strong sense of self worth
- There is a genuine desire to learn
- Warm interpersonal relationships are present
- Progression is from the known to the unknown
- Strategies for self-evaluation are planned
- Conflict is always addressed
- There is a stimulating educational environment
- Direct teaching takes place when required
- The fear of failure is eliminated.

These belief statements were used at a number of staff meetings to review practical approaches being used within the classroom, such as the arrangement of desks, negotiation of relationships between students and teachers, and the way in which units of work were planned and implemented. They were also used as a basis to further articulate a

philosophical position on the concept of multi-age. This remained a challenge, particularly when it was necessary to add two further groups for the following year due to increased enrolments. The problem of how the groups were to be organised and what combination of age groups were to be utilised remained a difficulty that needed to be resolved among the three of us. Also during this time research was carried out on the available literature on multi-age structures. As a result of the various deliberations among the staff, a statement on the formation of pastoral care groups was developed. The beliefs incorporated into this statement (Exhibit 3.2) became integral to the development of the multi-age philosophy within the primary school and were also to become an essential part of orientation programs for new teachers and the basis for resolving dilemmas that arose over issues surrounding multi-age.

It was decided to use the term 'pastoral care groups' rather than grade levels to ensure firstly that there was a move away from the grade level assumptions and secondly to incorporate the notion of a supportive and caring environment. It was also the intention, as outlined in the statement, that a student stay with the same teacher for three years so that there would be the opportunity for developing a stable environment. It also allowed the teacher to develop a better understanding of what individual students could do over a longer period of time and to nurture a relationship built on mutual trust and understanding. However this policy was open to negotiation if there were extenuating circumstances such as personality clashes between student and teacher. In some cases there were requests for a student to remain with the teacher for a longer period of time. Decisions of this nature were always carried out in consultation with the teacher and parent and student. Each year, when the task of forming new groups arose, several aspects were taken into consideration, as outlined in the guidelines. One in particular was establishing the age range each teacher considered they were comfortable working with. All teachers, except one, expressed strong reservations about taking on a group consisting of students ranging in ages from five to twelve or grades one to seven. The dominant concern, as will be highlighted in the data, was catering for the learning needs of such a large age range.

Exhibit 3.2

Policy on the Formation of Pastoral Care Groups

Rationale

Pastoral care groups are formed on the basis of the family model. It is within the family model that the individual's unique developmental levels are recognised and celebrated. A supportive environment is then nurtured that allows and assists the child to acquire cognitive, social and psychomotor skills. All members establish clear expectations about the learning and socialising process. At the same time all are used as model and teacher.

Objectives

1. To ensure that pastoral care groups correspond with the reality of individual differences, needs and talents.
2. To provide a secure and stable environment where all involved are allowed to work together for a longer period of time free from the constraints of time-tabled growth and pre-planned curricula.
3. To develop a supportive atmosphere through peer tutoring.
4. To minimise the trauma of entry into this school by introducing people to an established and supportive group.
5. To nurture a climate that is conducive to the development of group processes.
6. To provide a non-competitive environment where the pressure to compete is minimised.
7. To allow all people to learn as much from each other as they can from teacher-instigated activities.
8. To allow people to become risk-takers.

Guidelines

Pastoral care groups will be formed on the following considerations:

1. An age range of at least two years
2. Interest groups
3. Teacher interest
4. Social development
5. Friendship groups
6. Teacher remaining with the same group for three years.

Another shared concern was recognising and catering for the unique development of the individual student and the inappropriateness of an age-graded approach and the need to meet this challenge at a whole school as well as on a classroom and individual level. This

need to confront issues at both levels became particularly evident when the notions of competition and assessment emerged.

The Issue of Competition

The issue of competition and how it was to be addressed arose when the school organised its first athletics carnival. There was strong pressure from parents to organise the students into house teams and to award points for the first three places in each event, which would be based on age. The staff resisted this move, as it was inconsistent with the multi-age ethos, and in response developed a policy on competition which recognised the inherent difficulties of competition particularly when it occurred at the expense of the social and emotional needs of the individual student. As a result, sports days were organised so as to allow the students to remain within their multi-age pastoral care groups and to participate in a series of round robin activities, such as ball games, races and novelty events. These activities were normally based on those undertaken during their regular physical education lessons. As each child completed an activity, the results were recorded in a personal folio which remained with the student. This structure proved to be a non-threatening but challenging way for the students to participate in physical activity—because it encouraged the students to strive for a ‘personal best’— and at the same time remained consistent with the multi-age philosophy which acknowledged the importance of catering for individual developmental levels in a co-operative and caring environment.

The Issue of How Children were to be Assessed

In the early years of the school the whole issue of how the students were to be assessed also became a major one, especially when parents requested that the traditional grading system—such as places in class, percentages and grades—be implemented. It was considered by the staff that engaging in these traditional practices was antithetical to the notion of multi-age. As a result of a number of meetings between staff and parents a statement on assessment was produced (Exhibit 3.3).

Exhibit 3.3 Belief Statement about Assessment

We Believe:

1. Assessment is not to prove but to improve.
2. Assessment should allow teachers to individualise and to meet the learning needs of each student.
3. Assessment should be in terms of individual progress.
4. Assessment methods should make students feel wanted in themselves and give them a sense of self-worth.
5. Assessment methods should be clearly defined for all and open to processes of validity, giving students a sense of fair play.
6. Assessment methods should recognise individual differences, talents and learning styles and give students a sense of being accepted.
7. Assessment methods should allow parents to be reliably informed of their children's progress.
8. Assessment should be continual and on-going.
9. Assessment should allow students to participate in assessing their own learning and act on the basis of the assessment.

These belief statements did not have universal acceptance from parents but certainly did from the staff. During the discussion on the nature and purpose of assessment the issue of social justice continued as a significant factor influencing the whole process of assessment. As a result, a social justice policy was produced to support the policy on assessment. Its intention was to promote students' social, emotional, cognitive and physical development without pressuring them to conform to normative criteria. A strong emphasis in this policy was on the recognition of how unhealthy competition and comparative procedures are used as a means to sort, label and compare students.

As a result of these statements an assessment system was developed that moved away from the notion of comparability and focussed instead on the concepts, skills and processes of individual students. Developmental continua for literacy and numeracy were produced by the staff which drew on work taking place elsewhere in education. These continua allowed the teachers to identify specific skills and concepts and record the date when they considered the student was proficient in that particular area. Each student also had a portfolio set up by the teacher which included a repertoire of assessments such as observation checklists, logs, journals, pictures and performances. These proved to be a valuable reporting tool when talking with the parents.

In line with this approach to assessment a parallel reporting system was developed. The resulting written report contained anecdotal comments drawn from the assessment records and other comments that teachers had compiled during the year. This appears to have been well accepted by parents, although there have been infrequent but ongoing requests for teachers to include marks and places in class. These requests have always been declined.

The English Policy

Another significant development was the English policy. This development resulted from an initiative by the Queensland Department of Education (1989) to redevelop the teaching of English within primary schools. This was seen as timely by staff because it was during this period that professional development sessions focussed on the significance of language as being fundamental to the way people interact. The timeline for the development of this policy was three years and finished as this study was in progress. The period of development of this policy proved to be a valuable one for staff because it provided further opportunities to clarify and articulate the essential ingredients of a multi-age approach to teaching, learning and social relations. Typical of the issues discussed and clarified were the curriculum, the nature of syllabus-bound knowledge, the integrated curriculum and its implementation within the classroom.

The Curriculum

During the inservice sessions it soon became evident that how the staff understood the concept of curriculum was problematic, because they all had their own definitions. It was recognised by the staff that it was essential that a shared understanding of the curriculum should be clarified to avoid possible confusion in further discussions on curriculum related issues. After several sessions a common statement on curriculum was produced.

Exhibit 3.4

A Definition of the Curriculum

A DEFINITION OF THE CURRICULUM

The curriculum is the means by which people may become aware of the holistic nature of the cosmos and their part in maintaining the relationship between God (Spirit), earth and humankind. This includes a critical awareness of:

1. the environment
2. the holistic and integrated nature of all knowledge
3. respect for the development of the whole person
4. the myths and symbols that constitute the ethos of the catholic school.

This definition of curriculum was intended to convey the belief the staff had about the holistic and integrated nature of the world in which they lived and reflected the emphasis on environmental literacy that emerged during the discussions. The definition also attempted to express the belief that an understanding of curriculum could not be limited to what was contained in the syllabus documents but rather needed to provide a broader world-view on the nature and purpose of education.

This approach to the concept of curriculum in turn generated a further set of questions that demanded a response, particularly on issues surrounding the nature of knowledge and

which knowledge was to be considered worthwhile and important. As a result of further discussion a number of belief statements about knowledge were produced.

Exhibit 3.6 Statement on Knowledge

BELIEFS ABOUT KNOWLEDGE

Knowledge is understood as consisting of more than a number of pre-specified areas of learning established by an educational bureaucracy. An understanding of knowledge needs to reflect the integrated nature of the human person and the way in which they make meaning.

1. Knowledge is constructed and reconstructed through social interactions in particular social contexts.
2. Knowledge is something that is known through personal experience and then reflected upon.
3. The knowledge construction process is personal; individuals construct knowledge in a range of different ways. These ways reflect the multi-dimensional nature of intelligence and the way individuals interpret new knowledge.
4. Knowledge is a seamless web and links can continually be made in order to facilitate the learning process.

During the discussion leading to the development of these statements, several issues emerged for the staff, particularly relating to their own role and that of the students in the teaching/learning process. The resulting statements intended to convey the belief held by staff that it was not the teacher who is largely the expert and the one who represents the body of technical and conventional knowledge that the students will learn, but rather it is the learner who is in control of knowing and demonstrating that he or she knows. It was important then for the teachers to create a learning environment where both the students and the teachers could assist each other in the reinventing of knowledge.

The understanding of the nature of knowledge contained in the belief statements also had implications for the way the syllabus was interpreted and implemented within the classroom and became a significant consideration for teachers when planning their units of work. One particular concept that began to emerge in discussion at staff meetings and inservice sessions was the notion of an integrated curriculum. This issue arose as staff members deliberated on the most effective way to deal with the holistic nature of knowledge, which challenged the traditional design for organising the curriculum based on separate and distinct disciplines.

The Integrated Curriculum

The concept of the integrated curriculum acknowledges the shift from the content focus of a single discipline orientation, within a prescribed grade level, where the emphasis is on teachers teaching content, to that of learners learning processes, skills and concepts across an integrated and broad range of disciplines. This approach to understanding the integration of knowledge was a particularly pertinent one for the staff and challenged the age-segregated nature of knowledge construction and thus demanded a response. As a result of staff discussion the following belief statements on the integrated curriculum were produced.

Exhibit 3.6 The Integrated Curriculum

THE INTEGRATED CURRICULUM AIMS TO
1. assist students to see the connections in learning
2. is closer to real life
3. provides a meaningful context for learning skills and processes
4. provides more opportunities for different types of learning and classroom organisation

Translating these beliefs into practice became an ongoing challenge for the staff, particularly when planning their units of work for the class.

Planning Units of Work

It was decided by staff that themes could be negotiated with the class that may or may not be syllabus-based, but which must meet the individual needs, interests and development of the children. To activate their prior knowledge and to stimulate interest, the first phase of planning examined strategies that allowed the children to engage with the theme, develop a shared knowledge base and contribute to the course of the learning journey. Appropriate strategies were then developed to implement the unit within the classroom setting, such as learning centre work, group activities and resource-based learning. The last mentioned approach was based on the notion of helping students to develop their information processing skills and to become independent and autonomous learners.

When planning units of work a process of co-operative learning and planning was implemented. This approach was detailed in the English program and has become a significant means for teachers not only to plan in co-operation with the teacher librarian and other valuable resource people, but also as an opportunity to reflect on their own beliefs and practices.

CONCLUSION

This section has given an insight into the context of the school which is the focus of this study. It has provided a description of how the multi-age ethos and practices, favoured by the school, have developed. How individual teachers responded to this setting are described in the appendix. The next chapter will review the research design of this study.

CHAPTER FOUR

THE RESEARCH DESIGN AND METHOD

4.1 INTRODUCTION

The purpose of this study is to investigate the interplay between beliefs and practices over a two year period in a school context that is likely to provide challenges and opportunities for professional development. Initially this chapter will provide an explanation of the epistemological framework that underpins the research design of this thesis. Second, the rationale for the adoption of case study method, as the most suitable approach to describe and analyse a social situation such as St Clares, will be explained. Third, the particular research methods to be utilised will be explained along with data gathering and procedural issues will be addressed. Finally issues such as trustworthiness, validity and reliability will be considered.

4.2 EPISTEMOLOGICAL FRAMEWORK

All social research is guided by theoretical underpinnings which are influenced by beliefs about the world and how it should be understood or studied (Denzin & Lincoln, 1998). The theoretical framework I adopted for this study reflected my particular worldview and determined a framework for designing, implementing and interpreting the research project. It also assisted in defining the scope of the data that needed to be collected and provided a basis for evaluating the validity and significance of the findings. This approach will be justified in the chapter.

Research Paradigm

Merriman (1998) and Candy (1989), among others, distinguish between three basic forms of educational research - positivist, interpretive and critical. The research design adopted

for this study is grounded in an interpretative approach which looks for culturally derived and historically situated interpretations of the social world (Crotty, 1998). This approach has been used because it seeks to explore the identity and meaning of the participants' beliefs and practices within a context of professional discourse. To the interpretative researcher the purpose of research is to advance knowledge by describing and interpreting the phenomena of the world in attempts to get shared meanings with others. Interpretation is a search for deep perspectives on particular events and for theoretical insights. It may offer possibilities, but no certainties, as to the outcome of future events (Bassey, 1999). The interpretative orientation also recognises that education is a process and school is a lived experience. Therefore understanding the meaning of the process or experience constitutes the knowledge to be gained from an inductive rather than deductive or testing mode of inquiry (Merriam, 1998). Because the intention of this study is to illuminate rather than generalise there is no claim that immutable laws have been discovered. However, there will be an understanding reached on individuals experiences and orientations within the school context. It is also possible that similar theoretical interpretations could be made of data obtained from individual teachers in similar schools, despite the inevitable differences between individual teachers.

Underlying most research methods is the assumption that knowledge is something that researchers extract from those being studied (Gitlin, 1990). Within the interpretative orientation is the possibility that knowledge can also arise from dialogue between the participants and myself as a listener in a particular context. The interpretative approach assumes that if human behaviour is to be effectively understood then it must be recognised as intentional and is actually what people believe themselves to be doing. This perspective was of particular value for the purposes of this research as I was interested in understanding the meaning people constructed and how they made sense of their experiences of the world. Consequently the researcher-subject relation was formulated as one in which both of us were involved in identifying and examining beliefs, practices and normative truths (Gitlin, 1990, p. 449). Furthermore I was conscious that the participants were not passive products of their social world, but active creators of it through intelligent

and imaginative collaboration, interpretation, definition, negotiation and contestation (Blackledge & Hunt, 1985; Merriam, 1998). This understanding took on added meaning because of the innovative approach of the multi-age school to teaching, learning and social relations and the dilemmas that it presented to the participants who had been conventionally trained. However, it became evident as the study progressed that some proportion of the teachers contributed to, and acceded to, the various principles underpinning the multi-age ethos of the school.

In order to conduct this research, I had to examine a variety of factors in mutual interaction. It was important that a framework be in place that enabled me to develop sufficient richness of data that I could identify and describe the belief systems of the individual teachers and how they were enacted in their multi-age classrooms. Consequently the study was grounded in that branch of interpretative research identified as symbolic interactionism.

Symbolic Interactionism

Symbolic interactionism is a particular interpretative approach that focuses on the ways in which people interact, use symbols to carry their meanings, and interpret words and expressions used by others (Schwandt, 1994). Symbolic interactionism is adopted in this study because it aims to approach human behaviour from the standpoint of society rather than biology (Hamilton, 1989). Symbolic interaction proposes that although each person has their own personal, unique history, they also participate in a variety of communities which share a stock of symbols including gestures, expressions, rituals and myths and most importantly language (Schwandt, 1994). Symbolic interactionism directs the researcher to place primary importance on the social meaning people attach to the world around them, and to adopt the perspective of those being studied, not the researcher's own perspective. As my fundamental source of information was the data gathered on-site while I was fully immersed in the life of the school, this perspective was particularly suitable for this study as it recognises that the participants will experience the world of the multi-age

classroom through their definition and understanding of it. Three major premises are fundamental to symbolic interactionism:

1. Human beings act toward things on the basis of the meaning that the things have for them.
2. The meaning of the things arises out of the social interaction one has with one's fellows.
3. The meanings of things are handled in and modified through the interpretative process used by the person in dealing with the things encountered (Blumer, 1989, p. 2).

According to this perspective people do not simply react to their environment but are also volitional, active agents who create meanings in their day-to-day interactions and act in accordance with these meanings. Although the concept of meaning is a complex one, in the context of this study it is understood to encompass the significance of a phenomenon to a person, that person's intentions about what to do with the phenomenon, and his or her reasons for the actions—all of which are constructions by the person, rather than a tradition which is handed down and received passively (Blackledge & Hunt, 1985, p. 235).

I was aware that the individual teachers in this study experienced the world through their definitions of it and therefore it was through dialogue that I could become aware of the perceptions, beliefs and attitudes and the meaning these gave to their actions. The interviews and written responses, for example, focused on how the teachers understood their experiences in the context of the multi-age school and the influence it had on their beliefs and practices.

In summary the research reported in this thesis is founded on an interpretative paradigm and used the symbolic interactionist perspective to relate the perceptions and reported experiences of all the participants in a way that made sense of the data. Within this

framework the research is founded upon a case-study approach so as to reveal the interplay between each teacher's beliefs and practices.

4.3 THE PURPOSE OF CASE STUDY

Walker (1985, p. 155) maintains that case study methods have a particular attraction for those with an interest in curriculum because they offer a means of integration across the disciplines of the social sciences. Case study methods also stress synthesis as well as analysis as a means of approaching hidden curricula, informal social structures and unintended consequences of action on the same terms as formal curricula, social and management structures. A case study is therefore likely to have the following characteristics:

- A concern with the rich and vivid description of events within the case
- A chronological narrative of events within the case
- An internal debate between the description of events and the analysis of events
- A focus upon particular individual actors or groups and their perceptions
- A focus upon particular events within the case
- The integral involvement of the researcher in the case
- A way of presenting the case which is able to capture the richness of the situation (Merriam, 1998, pp. 30-31)

According to Rudduck (1989, p. 36) those who share a view of the curriculum field as organised around issues rather than around theories find in case study, "an empirical genre appropriately flexible, eclectic and capable of creating surprises." Stenhouse (in Rudduck, 1989, p. 35) in justifying the contribution of case study methodology argued that educational theory must be tested by how well it fits with the realities of experience in schools and classrooms. Case study provides evidence of such realities and gives practitioners a way to test theory. Case study research, as Stenhouse developed it, offers both a way of grounding enquiry in the practice of teachers and a means of promoting

dialogue about their practice and the beliefs that sustain them. Also case study recognises the complexity and embeddedness of social truths and therefore can represent the discrepancies and conflicts between viewpoints and actions of participants (Bartlett, 1991). Thus case study is concerned with gaining an understanding of the interaction of factors and events which have led to a specific situation, particular practices and an individual's experience (Yin, 1994). As such, case study is considered particularly suitable for the focus of this study.

However, a number of epistemological issues must necessarily be considered when adopting a case study approach. As Lather explains (1986, p. 256), "we are now in a post-positivist period in the human sciences, a period marked by much methodological and epistemological ferment." This period is marked in particular by approaches to enquiry which recognise that knowledge is socially constituted, historically embedded and value-based. Thus, case study advocates have pitted a qualitative method against the positivist tradition, and in so doing have been asked to consider a variety of difficult questions. In particular they have been called upon to demonstrate validity, reliability, trustworthiness and generalisability. A suitable method situated within case study that addresses these issues is the quasi-historical approach. It is this particular method which has been used with this study.

The Quasi-historical Approach to Case Study

The quasi-historical approach is based upon the discipline of history which is traditionally a documentary one: it rests upon written records which are either the surviving by-products of social process or the witness of individuals specifically written for audiences (Stenhouse, 1983). Thus a researcher operating out of this particular mode is concerned with the provenance of sources. Forms of evidence include written records, communications, observations and recorded interviews. Stenhouse (1983) would refer to the yield of field work at this level as case data. This is the primary source similar to the evidence to which historians attach particular weight. However, because case data are likely to be too bulky

to be analysed repeatedly, and in parts too sensitive for immediate release, they can be reduced to an edited primary source without explicit comment. Indeed this was the case with this study as will soon be explained.

The case study then is an interpretative presentation of the case resting upon, quoting and citing the case data for its justification (Bartlett, 1991). Like an historian, the researcher examines the records looking for meanings, patterns and emerging themes. The researcher also attempts to uncover contradictions, irrelevancies and changes in attitudes and beliefs. Essentially the quasi-historical approach aims to understand a single instance as completely as possible by allowing the past to inform the present.

In the context of this study case method together with supplementary techniques such as belief-mapping have been used to provide the primary evidence. The evidence contained in the case stories (Appendix A) has been used to address “theoretically general” questions which have been listed at the conclusion of this chapter (p.98). Since the aim of this study is to illuminate the experiences of individual teachers within a particular multi-age school, the questions are approached by considering the general concepts and principals as evident in individual cases. Consequently the main evidence (Chapter Five) is a combination of the case method and theoretical abstractions. This approach will be further described when considering how the data were analysed.

4.4

PARTICIPANTS

The process of asking for volunteers began at a staff meeting in November 1992. I explained briefly the reason for the study, and handed out a copy of my proposal that had been submitted to the University and approved. I requested that they read the proposal and then approach me if they wished to participate. Of the eight teachers who expressed an interest and a willingness to take part, six eventually participated fully over the two years of the study. Of the other two initial participants one asked to be released from the study after six months because she felt it was not helpful. The second teacher was

transferred after the first twelve months and therefore was unable to take any further part. A profile of each of these six teachers is presented with their story in the appendix. The procedural issues associated with the research and the implications for these participants will be explained in the next section.

4.5 RESEARCH METHODS

It became clear to me that if reasonable inferences are to be made about what the individual teachers say, intend and do then their verbal expressions, predispositions to action and teaching behaviours must all be included in the assessment of beliefs (Pajares, 1992). Not to do so calls into question the validity of findings and the value of case study. I noted that traditional belief inventories provided limited information with which to make inferences because they may not respond to the beliefs and practices relevant to the teacher's unique professional reality (Munby, 1982). Therefore an understanding of the context-specific nature of beliefs became critical (Munby, 1982). Wilson (1990) observed that teachers' beliefs surface from their behaviours as much as from their answers and therefore it was necessary to employ several information gathering devices to obtain a wide variety of data in a variety of contexts.

The following table summarises the methods used over the duration of the research.

Table 4.1 Data Gathering

Instrument	Interview	Observation	Written response	Conversation	Group discussion	Journal
Year	1993 1994	1993 1994	1993 1994	1993 1994	1993 1994	1993 1994
Participant						
Jenny	6 4	3 5	3 3	2 6	1	
Tony	5 4	4 5	3 4	1 1	1	
Karen	6 5	4 5	3 6	2 5	1	
Kathy	6 5	4 5	3 5	2 3	1	4 2
Dave	5 4	4 4	3 4	1 2	1	
Donna	5 4	4 4	3 4	2 3	1	

Numbers in the table are the frequency of usage of each method with each participant.

Pseudonyms have been used here and throughout the thesis.

The Interviews

Interviewing is considered one of the most powerful ways, in qualitative research, of understanding others because it allows the researcher to access an individual's beliefs, wishes and intentions in their own words rather than in the words of the researcher (Taylor & Bogdan, 1998). The interviews in this study involved a minimum of eight sessions distributed over twenty months, each session being approximately thirty minutes in duration. Since the purpose of the study was to elicit the beliefs of individual teachers and the impact that a multi-age context had on them, the interviews were semi-structured to allow free expression of participants' thoughts. The semi-structured interview is defined as a process by which the researcher explores a topic by using questions with fixed and

unfixed wording to elicit information from the participants (Minichiello, Aroni, Timewell, & Alexander, 1990). The questions are formulated before the interview begins but the ordering of the main and support questions is varied as the interview unfolds. The wording of the questions can also be varied to ensure the meaning is grasped by the participants. This approach was used in the present study.

The interviews were audio-taped and then transcribed verbatim. The transcripts were returned to each of the teachers for their scrutiny, confirmation or criticism. Also, after each interview I analysed the material and made notes on a covering sheet to act as a framework for subsequent questions. Thus the process was concerned with the "unique, the idiosyncratic and the wholly individual viewpoint" (Guba and Lincoln, 1989, pp.155-156). This approach to the gathering of data is consistent with the quasi-historical method because of its emphasis on the importance of primary sources in looking for meanings, patterns and themes which are then confirmed by the participants.

Participant Observation

I was conscious of the fact that interviews by themselves were an insufficient source of data, and that many aspects of the information communicated in the interviews could be better understood when considered together with observations of classroom practices and parent-teacher discussions. I observed teachers either eight or nine times, dependent upon the teacher. These observations took place mainly within the context of the classroom as the teacher interacted with the students. However, I was also able to observe teachers in other contexts as opportunities arose, such as parent-teacher interviews or staff meetings.

I was aware that in undertaking participant observation it was necessary to ensure that the teacher being observed felt at ease and was not threatened by my presence. All participants granted me permission to observe them in the classroom with an "open invitation" to come in at any time. I had received sufficient feedback from all the

participants indicating that I had a good rapport with them and was not seen as a threat to the way they operated in the classroom. I had also assumed, as part of my role as educational leader in the school, the obligation to work with the teachers in the classroom at regular intervals, and at times to take the whole class. Whenever I entered the classroom for an observation session I ensured it was with a minimum of distraction to either the teacher or the students and that I took up a position which did not disrupt or in any way interfere with the actual course of events.

In undertaking participant observation I also was sensitive to the bias inherent in this type of research, particularly as the observations I made were filtered through my world view and perspective as a leader in the school (Yin, 1994). To counteract this possible bias, detailed notes of each observation were shared with each participant after they had been typed. These were also used as a basis for follow-up conversations if clarification was needed on events that took place during the observation.

Written Responses

A maximum of six written response sheets were completed by the participants over the two years of the project. The sheets posed questions deriving from the research objectives and were designed to complement issues raised in interviews and observations. After each response sheet was returned I discussed what had been written with the teacher and clarified any points that may have led to a misinterpretation of the data.

Group Discussion

One group discussion was undertaken with the participants, midway through the project, so as to gain insights into dilemmas and mutual concerns they had when working within a multi-age setting. Because the audiotaped discussions were to be transcribed the six participants were divided into three even groups. These groupings were self-selecting. The discussion was open-ended and many of the questions and issues were group-generated.

I found these discussions particularly useful because they yielded information that corroborated what had been obtained from other techniques.

Journals

When negotiating the research with the participants, the possibility of using journals as a means of reflecting on their beliefs and practices was presented. Burgess has claimed (1988) the keeping and sharing of journals can enrich the content of reflective conversations, particularly when the social circumstances in which actions occur are of major interest. Holly (1984) has noted that journal writing helps teachers to become aware of their surroundings and more sensitive to regularities in the whole context within which action takes place. However, when the benefits of journal writing were put to the participants they were not greeted with any deal of enthusiasm, with the exception of one participant. Her journal writings over the two years were included in the research evidence for her case study. I did not pursue the issue with the remaining staff because I considered it would be counter-productive.

4.6

PROCEDURAL ISSUES

Failure to address ethical issues such as control over the information generated can seriously undermine the validity of a study (Kemmis, 1983; Davis, 1983). I was conscious of these elements at all times and ensured that the following ethical principles were adhered to: confidentiality, negotiation, ownership and accountability. Approval for the research was gained through the Administration team of the school and from the Director of Brisbane Catholic Education. Participants were informed of the purpose of the research and the commitment it entailed. As the research evidence was of a sensitive nature, anonymity was maintained on records at all times to protect identification of individuals and pseudonyms have been used throughout this thesis. Written transcripts of interviews and other documentary evidence, but not the interpretative case studies, were made available to participants for their critical scrutiny. The practical consequence of this approach was

that any discrepancies or possible biases in interpretation were clarified and if necessary changes made. These changes were infrequent and in general the participants expressed satisfaction with the primary sources. No person will have access to these archives without participant consent, and in any event pseudonyms are used on all archival material.

Role of the Researcher

Questions about the ethical conduct of research have been challenged by the arguments that all decisions about research design are inherently contaminated by the researcher's own personal and ethical position (Bassegy, 1999). It would seem a requirement therefore that the researcher clarifies this inherent contamination by considering ways in which its influence can be monitored and reduced.

I was familiar to all the participants within this study, because they were members of staff of which I was the principal. I was also aware that my position, as an authority figure could be a barrier to open dialogue. However, the challenge of ensuring that my influence as researcher could be minimised was facilitated by the school ethos. As was outlined in chapter three, St Clares shared a common vision and sense of purpose about teaching, learning and social relations based on a multi-age philosophy. This philosophical approach had implications for the way leadership within the school was understood, not only for myself as school leader, but also for staff and students. As was highlighted in chapter three, multi-age values an approach to pastoral care (Exhibit 3.2) and teaching and learning (Exhibit 3.1) which is based on collegiality and the need to honour the integrity of the individual in a caring and supportive environment. I was conscious therefore of the need to ensure that my leadership style was consistent with this approach to collaborative decision-making. Failure to do so would have resulted in a school culture which was based on unilateral rather than relational power. Several researchers (Cheng, 1993; Deal & Paterson 1994; Hargreaves, 1994) have also noted that a facilitative leadership style is essential to the development of a collaborative school culture which values modelling the school's vision, open communication and team building.

I was aware that a relational approach to leadership engendered a collaborative ethos which emphasised the importance of trust and a 'letting go' of control over the development of significant cultural norms. Indeed, the participants in this study had shared with me all, or part of, the journey through the intricacies of developing and implementing the beliefs and practices integral to the multi-age school. Considerable time over the first five years of St Clares was devoted to negotiating significant philosophical and practical decisions that could have been made unilaterally. I felt, as a result, that I had built up a trust and rapport with the teachers which, in turn, enabled me to engage in open dialogue with them. As one teacher noted:

Jenny: I can see that you do not look on teachers as teachers but as people interacting with other people and you have enabled them to enjoy the freedom of what they have got. You have enabled me to be myself (Interview 15-11-93).

All the participants had also volunteered for this study and, as their stories in the appendix reveal, were keen to share their experiences, dilemmas and fears which resulted from working in a multi-age setting. This strength of the researcher and participant rapport was a significant factor in contributing to my personal and ethical position in this research project.

Trustworthiness

In adopting a specific research tradition based on an interpretative approach I became aware of the tension that such an orientation can have on the design of the research and the interpretation of the data. I was also conscious of my own educational history as a teacher and administrator, conventionally trained, for twenty six years. I was also aware of my role in the school and the substantial influence I had in determining the direction it had taken with the multi-age approach. With this in mind when implementing the research design I had to ensure that validity and reliability were addressed when focusing on the

trustworthiness of data. Several writers (Lincoln & Guba, 1985; Kincheloe, 1991; Bassey, 1999) have suggested that "trustworthiness" is a useful indicator of the verifiability of data.

A quasi-historical approach to research challenges the assumption that what is known can stand independently from the inquirer and can be described without distortion (Smith & Heshusius, 1986). Nevertheless, I engaged in a cyclic process of data collection, questioning, analysis and more questioning with the participants to ensure that my interpretations were acceptable to participants. This process of mutually negotiating understanding and interpretation assisted in removing my personal bias and misconstrual from the narrative. Closely aligned to the concept of trustworthiness is reliability and validity.

Reliability

When conducting quantitative research, reliability is concerned with the replicability of scientific findings. However, this is problematic in qualitative research because it is not the aim of the researcher to isolate the laws of human behaviour. Researchers seek to describe and explain the world as those in the world see it (Merriam, 1998). Because of the difficulties associated with the traditional use of the term reliability when applied to qualitative research, attention is given to determining the 'dependability' or 'consistency' of the findings (Bassey, 1999). The question is whether or not the results are consistent with the data collected.

As a means of authenticating and explaining research findings, an audit trail is useful (Merriam, 1998). An audit trail is created by providing details of how data were collected, how categories were derived, and how decisions were made throughout the inquiry. If others are able to follow the trail of the researcher, they will be in a position to judge the quality of the research findings themselves. These details have been addressed in this study when describing and explaining procedural issues and data analysis.

Validity

Validity is concerned with the accuracy of the findings, or how they match reality. Internal validity is concerned with the relationship between cause and effect, the external validity is concerned with the extent to which a cause-and-effect relationship can be generalised in other contexts (Bassegy, 1999). Case studies have often been criticised for lacking validity (Denzin and Lincoln, 1998). This criticism appears to stem from the fact that the case study method seeks to understand the particular, and thus therefore, case study may not reflect universal truth. Also when multiple meanings exist, it is difficult to judge an interpretation as valid or invalid.

In response to these criticisms it is necessary to examine the aim of this study. In this particular project, the case studies provided information that allowed me to interpret how the belief systems of six teachers hindered or enhanced their work in a multi-age school. At the very least the written text should be persuasive in helping the reader understand the teachers' ways of managing the complexity of their multi-age classroom. So as to ensure validity in case study, it was necessary that my interpretation correspond with the way that the participants interpreted their reality. This credibility is an important aim of the interpretative approach (Merriam, 1998), Therefore, the methods that I employed attempted to ensure that I challenged assumptions, checked and rechecked meanings with the participants, searched for exceptions and sought confirmation. For this reason triangulation was used. Also, the process of data collection was cyclical rather than linear: questions were asked based on earlier evidence leading to further questions and evidence-gathering.

The production of generalisable knowledge is not an appropriate goal in qualitative research as, "a single case or small non-random sample is selected precisely because the researcher wishes to understand the particular in depth, not to find out what is generally true of the many" (Merriam, 1998 ,p. 208). However, it is possible to evaluate theoretically general questions, as this study does in depth, with contextually-specific evidence.

Therefore it is possible that similar theoretical interpretations could be made of data obtained from individual teachers in similar schools, despite the inevitable differences between individual teachers.

Triangulation

Triangulation is qualitative cross-validation conducted among different data-collection methods as a comparison of information to determine whether or not there is corroboration (Merriam, 1998). Two kinds of triangulation were used, methodological triangulation and researcher-participant triangulation. The first refers to the use of multiple data collection methods (interview, participant observation, written responses, conversations) which avoids the reliance of one method to explore the participants' beliefs and practices (Cohen and Manion, 1994). The second involved cross-checking the meaning of data obtained from the various methods with the participants. In other words I used each participant as a 'running triangulation check' to ensure that I had correctly interpreted what they had said, written and enacted.

4.7

DATA ANALYSIS

Four steps for analysing data highlighted by Miles & Huberman (1994) were used in this research: data were recorded, reduced, displayed and verified. The data, which were collected in raw form, were filed in an individual portfolio which formed the case record. Because the case record was voluminous, a coding system was necessary so that the case records could remain the evidentiary base for each participant's story. This process was carried out by selecting key words, phrases and sentences that highlighted the particular beliefs and practices of each teacher. These emerging beliefs and their associated practices were recorded in a card system for individual teachers. These responses were gradually listed and grouped according to similar beliefs and as further data became available additional beliefs were added and existing ones modified. With further scrutiny of the data it became apparent that these beliefs could be structured around some of the dimensions (self; relationships; knowledge; teaching and learning;

change) highlighted in the literature. However, even though the belief dimensions were partly influenced by the literature on teachers' beliefs (Pajares, 1992; Pratt, 1992), it was also evident that constituent beliefs were grounded in the data that emerged.

I was aware that these belief dimensions needed to be sufficiently detailed and mutually exclusive to allow coding of the data and therefore the later interviews in particular focused more on testing the links within the belief dimensions. It was then possible to construct a summary table, presented at the front of each teacher's story, which displayed the beliefs and practices over the two years of this research. This table served two purposes. First, it was possible to identify the patterns of belief positions which constituted the orientation of individual teachers, and second it was possible to pinpoint any changes in belief patterns.

The rationale for including the full set of teachers' stories in the appendix rather than in the body of the thesis was so that the information contained in the case studies could be used as the foundation for a more theory-centred analysis to be carried out in chapter five. For the most part I restricted my direct quotations to teachers' oral and written comments when presenting the findings and discussions in chapter five. However, I also drew upon and incorporated other evidence as appropriate. This analysis therefore goes beyond the case stories by comparing and contrasting the cases so as to reveal their implications for the belief-practice nexus. This approach in which the full set of stories was used to abstract information is consistent with case study method (Bassegy, 1999; Merriam, 1998). A significant theoretical component of the analysis was determining a teacher's theme, as well as the distinction between thematically central beliefs and core beliefs. As the teachers' stories were analysed it became apparent that all professional beliefs were systematically interconnected but that some were thematically central and influenced other beliefs. These findings are substantiated in chapter five by using the evidence contained in the teachers' stories to construct orientation (belief) maps and a summary table. The method and criteria for determining how these concepts were analysed and developed will now be explained.

Identifying a Teacher's Theme

The theme unique to each teacher was identified by using the teacher's stated images; beliefs that were repeatedly highlighted as being important to them; and an inference by me about what seemed to be 'at the centre' of the teacher's perspective based on the previous two criteria. Tony, for example, came to St Clares with a set of beliefs about self, relationships, knowledge and change that he consistently emphasised as being integral to how he operated in the classroom. He held beliefs about relationships which valued developing the self-esteem of his students and respecting their individuality. He considered these relational beliefs important for creating a supportive classroom in which he could transmit the content knowledge contained in graded syllabus documents. His self-nominated image of someone who aimed 'to make a difference' to the lives of the students reflected this approach. Connected with these beliefs about self, knowledge and relationships was a commitment to improvement, professionally and personally, so that he could ensure he was 'making a difference.' It was the consistency of Tony's self-characterisation that established his theme early in his first year at St Clares, which was characterised as 'developing self to promote student growth' and which in turn, influenced his approach to teaching, learning, assessment and how he understood the curriculum. As will be explained in chapter five, the dilemmas caused by multi-age and his own desire to improve challenged his knowledge beliefs leading to significant changes in what was considered important knowledge and how it was imparted. The thematic connections between his relational, knowledge and change beliefs were now reflected in his self-image of 'making a difference' but as someone who was no longer custodian of syllabus content knowledge. The subsequent changes in his classroom practice, as represented in his orientation maps, reflected these changes in his beliefs.

As Tony's story indicates, there are some categories of beliefs that were 'more involved' in theme definition than others. Beliefs about self, relationships and knowledge (and in two particular cases beliefs about change/self improvement) were highly significant in determining individual themes and warranted further investigation.

Identifying Core and Secondary Beliefs

Although all the teachers' beliefs were interconnected in various ways some seemed thematically central, others secondary. Put another way, not only were some beliefs central to a teacher's theme, but they also influenced other beliefs. From this I was able to infer that some beliefs were 'core'—in the sense of being at the centre of a teacher's theme, and influencing other beliefs—whereas others were 'secondary' because in some sense they were dependent on the core beliefs. The following section provides an explanation of the orientation maps which have been constructed for each teacher to represent beliefs and practices. I used various sources to inform inferences about teachers' beliefs and practices, including observations and attending to what they did in the classroom. This approach enabled me to distinguish beliefs from practices, particularly when constructing the orientation maps. Tony's map (Figure 4.1) for example illustrates how his pedagogical beliefs informed his classroom practice, including directed whole class teaching and an emphasis on content-based knowledge.

Orientation Maps

Any external observer of case study should be able to follow a clear chain beginning with the collection of evidence from the research question through to the findings or conclusions of the case study. The extent to which a clear audit trail of evidence can be achieved during this study appears to depend to a large degree on the richness and accuracy of the case study database. Throughout the process of data collection, sufficient attention was paid to the maintenance of the database so as to facilitate the establishment of a chain of evidence.

A significant part of the findings of this study focus on the orientation maps of each of the participants. The steps that were taken to derive the orientation maps from the evidentiary data collected during this study will now be presented by utilising one of Tony's orientation

maps (Figure 4.1) as an example. By ensuring that the evidence collected was accurately portrayed and appropriately examined in order to reach the conclusions contained in the orientation map, I have contributed to construct validity and increased the overall quality of the case (Yin, 1994).

Step One: The transcripts of interviews, observations and written responses were read and given back to Tony for his confirmation and comments. Any discrepancies or additional observations made by Tony from this raw data were noted on the transcripts and observation sheets. Significant statements and phrases that related to the study were extracted from the data discussed with Tony during later interviews. Care was taken to ensure that the meanings arrived at were as close as possible to Tony's original data. This process was repeated for each interview. In this manner, Tony was able to corroborate or clarify perceptions and interpretations, thus contributing to the validity of the evidentiary base.

Step Two: Tony's emerging beliefs and associated practices were recorded on a card system. It was found that these beliefs could be gradually collapsed into several belief dimensions (self, relationships, knowledge, society, social justice, change, teaching, learning and learners, assessment, curriculum). These dimensions were continually referred back to the original data in order to validate them.

Step Three: A summary table (placed in the introduction of Tony's story) was then constructed which displayed Tony's beliefs and practices over the two years of this research. This table was returned to Tony in order to validate the beliefs and their meanings. As a result of ongoing data analysis it was possible to create a description of each belief dimension in as an unequivocal a statement as possible.

Step Four: From the data summarised in the table and case story, it was possible to create Tony's orientation map by a process which identified his core and secondary beliefs. Core beliefs were identified by using the following criteria:

- Beliefs that Tony highlighted as being integral to how he operated in the multi-age classroom
- Beliefs which were consistently noted as being highly significant to him
- Beliefs connected to his image statements and how these statements were linked to his 'professional centre.'

These core beliefs (knowledge, self, relationships and change) and their descriptive statements were placed in the circles and bi-directional arrows drawn to highlight their interconnections and mutually supportive nature. Having identified these defining beliefs it was then possible to list and classify those beliefs and practices which were influenced by the core beliefs. These secondary beliefs (rounded rectangle) and associated practices (rectangle) were connected with the core beliefs by unidirectional arrows to depict the thematic influence.

From these connections it was then possible to design a theme statement which captured Tony's orientation. Listing key words, statements, images and practices from the orientation map, that encapsulated Tony's beliefs and practices for early 1992, assisted in creating a theme statement. This theme statement (Developing Self to Promote Student Growth) was placed in the octagon.

4.8

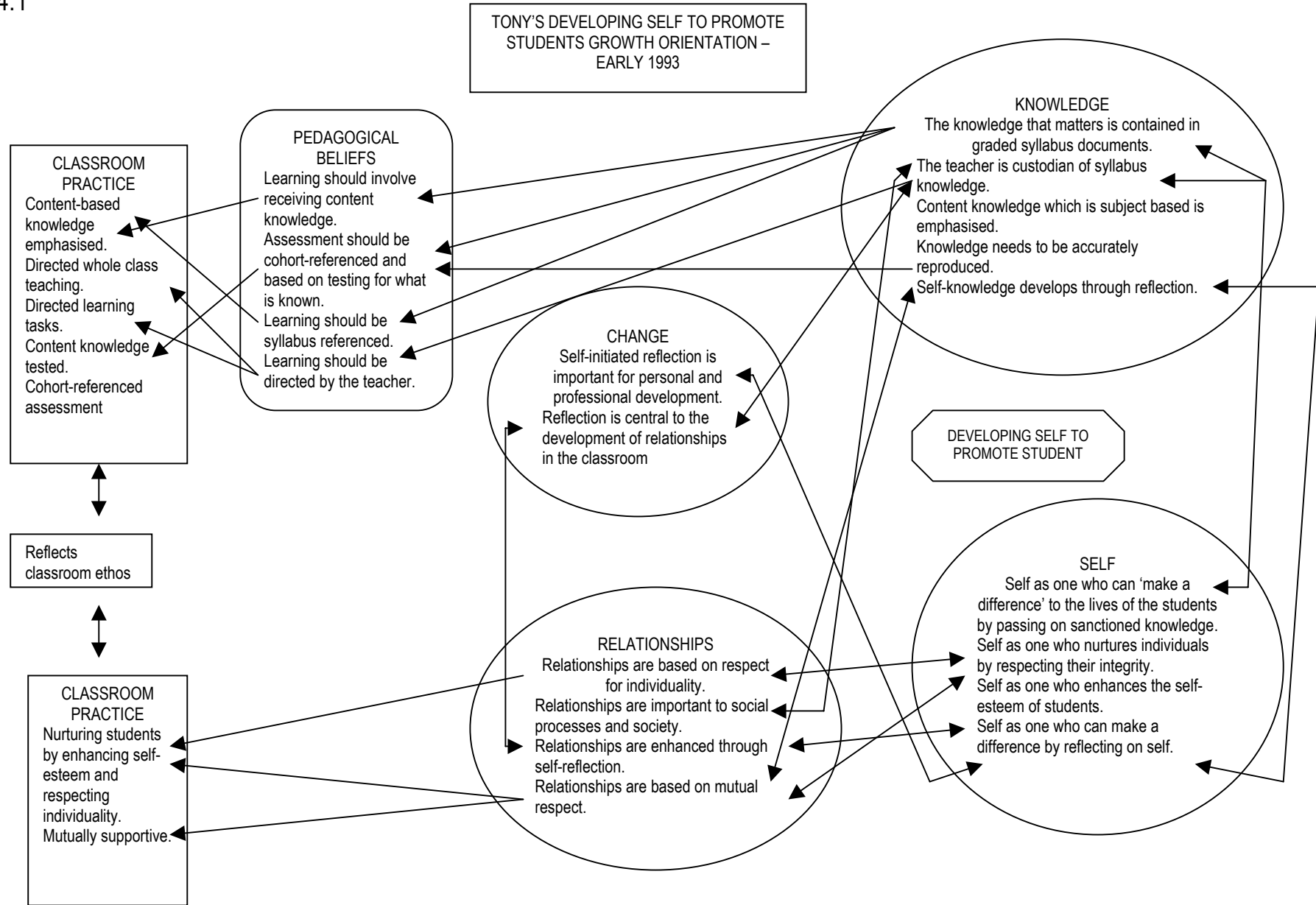
SUMMARY

The research orientation and its associated strategies used to ensure systematic inquiry in this study have been explained in this section. A qualitative approach to research was chosen because such a paradigm is consistent with the type of information and understanding sought regarding the nature of teachers' belief orientations and how they interact with the multi-age philosophy. The data gathered during the two years of this study have been written up in the form of individual case studies and are contained in appendix A. It was these data that provided the evidentiary basis for investigating the three major research questions that emerged to focus the research. The research questions explored were:

- Question 1 Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientation?
Is a primary vs secondary (core vs secondary) distinction useful when investigating individual orientations?
- Question 2 How did individual orientations frame the teacher's professional practice within the multi-age classroom?
- Question 3 What are the implications for professional in-service and for the evaluation of complex curriculum initiatives like multi-age primary schooling?

The following chapter will present the findings and discussions of this study.

Figure 4.1



CHAPTER FIVE

FINDINGS AND DISCUSSION

5.1 INTRODUCTION

This chapter presents the basic findings of the research data, by investigating the consequences of the interplay between the multi-age setting of the school and the beliefs and practices of the individual teachers. The grounded belief dimensions that are summarised at the beginning of each teacher's story, will also be utilised as a descriptive framework to identify significant themes from within these stories. Three questions, which emerged from the literature review, are used to direct the discussion of the findings so as to draw out the similarities and differences between the teachers and the ways in which they made meaning of the multi-age ethos of the school. The questions will be discussed in turn, citing evidence from the cases and linking the findings with those reported in the literature review. The discussions and findings from this section will be used in the following chapter to address the focus of this research, which is on:

the interplay between beliefs and practices over a two year period in a school context that is likely to provide challenges and opportunities for professional growth.

5.2 THE THEMATIC NATURE OF TEACHERS' BELIEFS

5.2.1 Teachers' Orientations

The first question investigates the interrelated nature of teachers' beliefs and will be addressed in two stages:

Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientation?

Is a primary vs secondary (core vs secondary) distinction useful when investigating individual orientations?

In answering the first part of question one it will be argued that teachers' beliefs form a coherent and interdependent set of beliefs which can be characterised as an orientation to teaching and learning. It will be claimed that it is possible to identify some beliefs which provide the theme or focus of a teacher's orientation, and that this theme is unique. For example, it was apparent that teachers' beliefs about self, relationships and knowledge played a highly significant and central role, although recognisably different roles in all the teachers.

To assist with representing the theme of individual orientations, an orientation map has been developed for each teacher. These maps indicate and label the connections amongst a teacher's beliefs and between beliefs and practices, and were useful for demonstrating which beliefs were part of the teacher's theme and how they were involved. The interconnected and interdependent nature of these thematically defining beliefs is illustrated on the belief maps with two-directional arrows. The way in which these thematic beliefs influenced other beliefs and practices has been represented with one-directional arrows and will be elaborated when discussing core and secondary beliefs.

The task of establishing the nature of the thematic relations was explained in chapter four. It was noted that there were several criteria used for determining a teacher's theme amongst which were the types of interconnections between beliefs to show 'thematic connections'; beliefs that were identified by the teachers to be highly significant to them; the consistency with which individual teachers confirmed their 'professional centre', or what beliefs were essential to how they approached their multi-age classroom; and the ways in

which they elaborated their image statements and how these statements connected them to their 'professional centre'.

On the basis of these criteria it was possible to infer how the concept of 'orientation' applied to a case. It will be noted that the key features of an orientation are that it has a 'theme' or that it is 'oriented' in a particular way; that it indicates a disposition to think, value and act in particular ways consistent with the theme; and that it therefore includes professional beliefs and characteristic practice.

Jenny's 'Personally Transforming' Orientation

Jenny's orientation was unique in this study because, as will be seen, she expressed a thematic coherence that was not evident with the other teachers. A recurring theme for Jenny was the need to engage in personally transforming behaviour so that she could create a relational environment that valued the integrity of the individual. The beliefs that constituted this 'personally transforming' theme were evident in her image of 'humanness' which she understood to be:

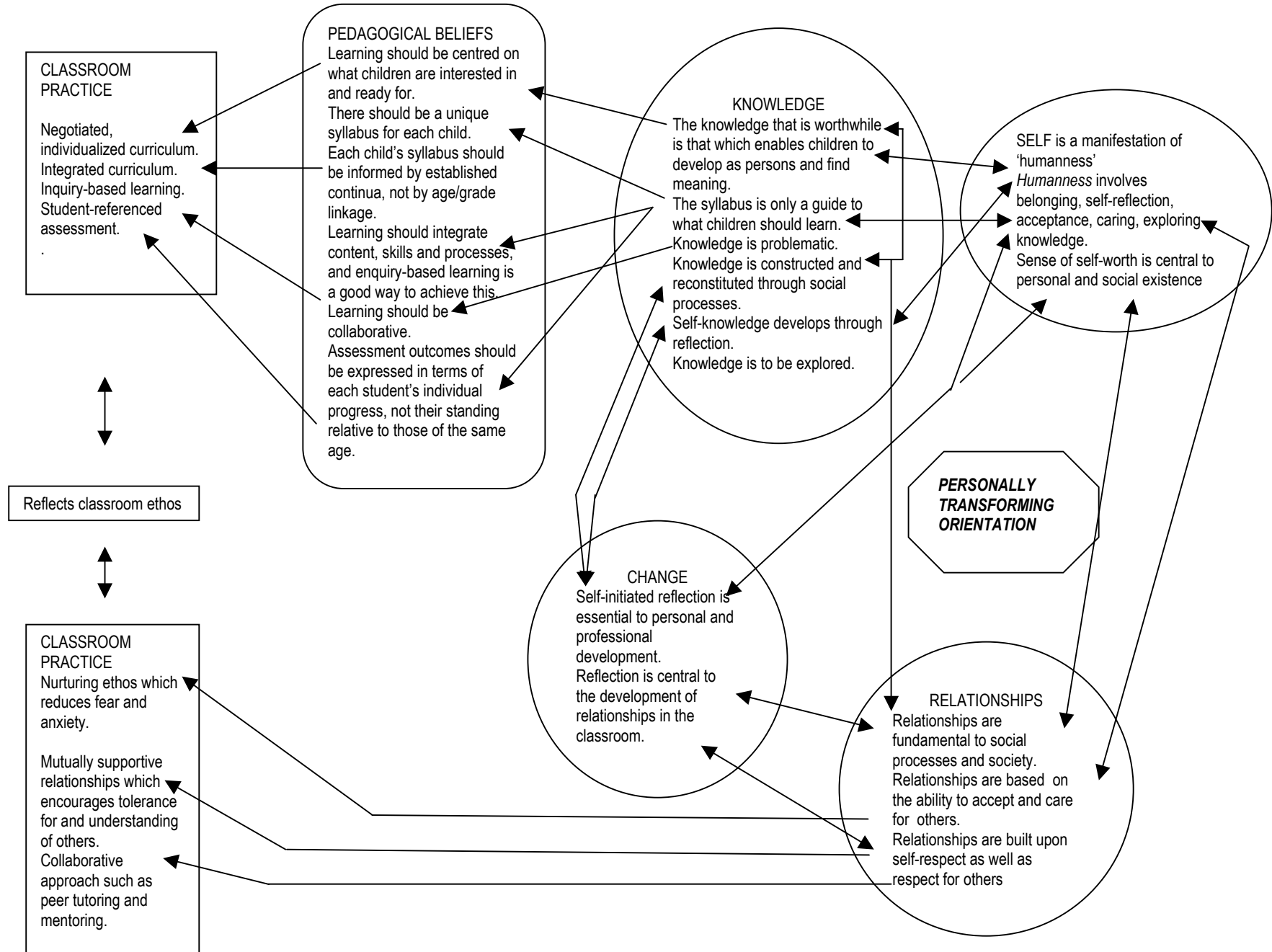
Jenny: Humanness is

- a sense of belonging
- a sense of being needed through relationships
- a sense of adventure/doing/exploring and creating knowledge
- a need for quiet inner reflection
- a strong need to communicate
- *a sense of identity (Written response 23-4-94).*

The following orientation map (Figure 5.1) highlights the beliefs and practices that were part of Jenny's theme.

Figure 5.1

Jenny's Personally Transforming Orientation



Jenny's 'personally transforming theme' reflected how she understood self, and self-in-relationships and was connected with her change beliefs, which influenced how she positioned herself in the change process. As will be seen later, her approach to the process and content of reflection was both internally generated and focused on her self-defining beliefs, which emphasised the ongoing need for personal improvement. Also linked with Jenny's sense of self was her belief about what constituted important knowledge and how it could be acquired in particular social settings. For Jenny, knowledge is problematic and continually needs to be challenged and explored through relationships, so that she and others can develop as persons and find meaning in their lives. As is evident on the orientation map, relationships for Jenny were fundamental to social processes and society. It was these beliefs that exercised a firm vigilance over Jenny's approach to life and, in turn, determined her role in the classroom and what and how the students learnt. Jenny's classroom was characterised by a teaching and learning environment where individuals took responsibility for actively transforming information to develop personal meaning. The thematic significance of Jenny's 'humanness' beliefs for her practice within her multi-age classroom is evident in the following comments:

Phil: What are the cognitive, affective and social learning factors associated with multi-age classroom?

Jenny: To isolate would be to compartmentalise. ALL THREE ARE TOTALLY INTERRELATED and totally dependent upon each other to nurture HUMANNESS. Family groupings - a path towards bringing human qualities to the fore within the clinical schooling forum - rounding/wholeness of the individual rather than fragmenting (Written response 23-5-93).

Tony's 'Developing Self to Promote Student Growth' Orientation

Tony's orientation was dominated by beliefs about self, knowledge, relationships and change and determined the theme of his orientation which is 'developing self to promote student growth.' For Tony it was essential that he develop self through reflection so that he could create a classroom ethos that allowed students to reach their potential. These beliefs were encapsulated in his self image as someone wanting to 'make a difference' to how his students understood themselves and the world. In this sense his beliefs bore some resemblance to Jenny's. However, the defining difference between the two was the key role Tony's knowledge beliefs played in determining how he could 'make a difference' to student growth and development. This characteristic of knowledge beliefs will be elaborated in the next section when discussing the core and secondary nature of beliefs. The role of these beliefs in determining Tony's theme is evident in the following orientation maps (Figures 5.2 and 5.3) which report his theme early in 1993 and late 1994. The changes that took place over this two-year period will be explained during this chapter.

Tony's knowledge beliefs, on entering St Clares, valued a teacher-dominated approach to implementing graded content knowledge which could then be objectively tested. For Tony, at this early stage of his multi-age experience, promoting student growth meant passing on graded content knowledge within a nurturing environment. As can be seen from the early map, reflection on what constituted important and worthwhile knowledge had not yet been subjected to his scrutiny, even though his change beliefs valued the need to improve personally and professionally.

Figure 5.2

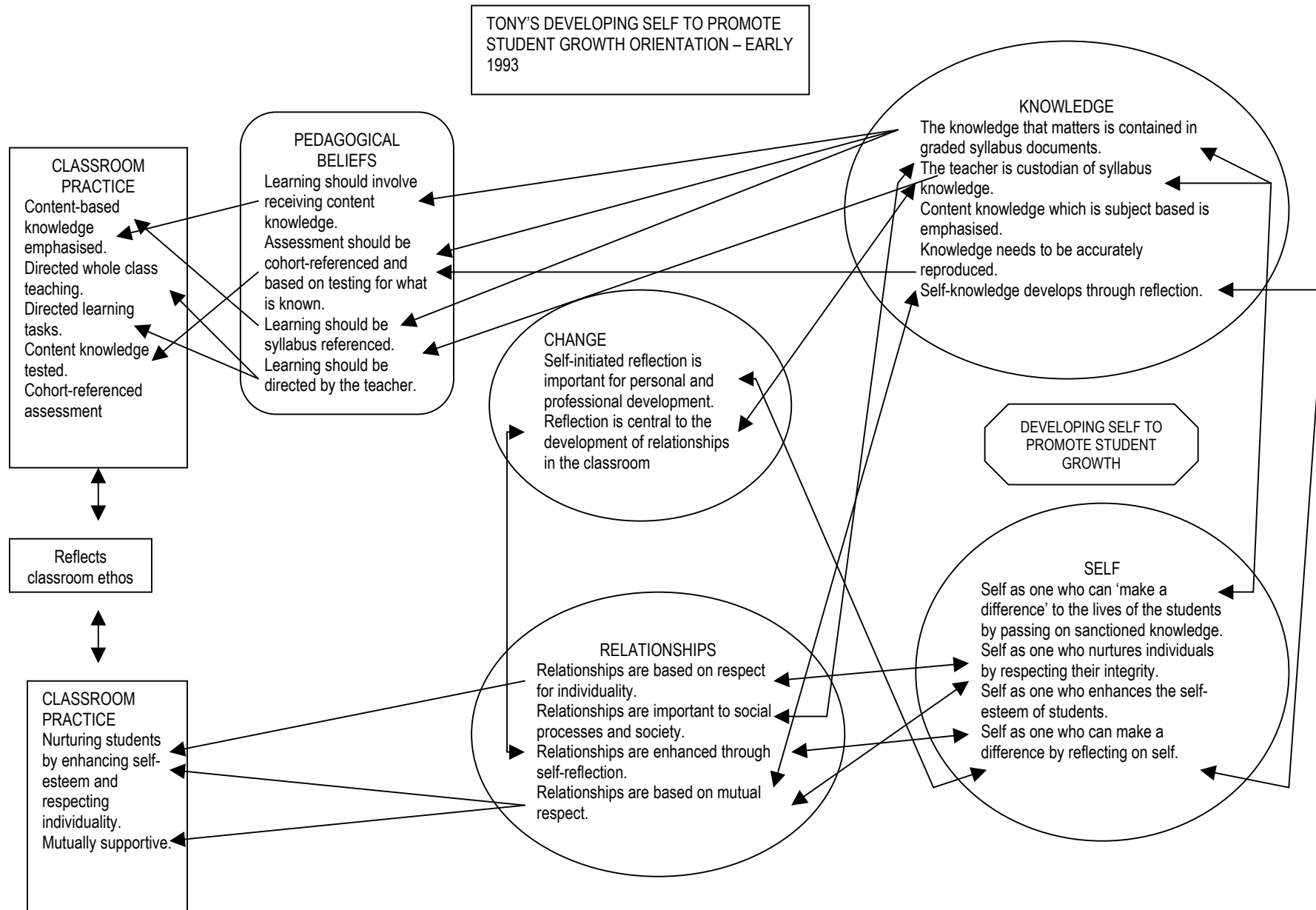
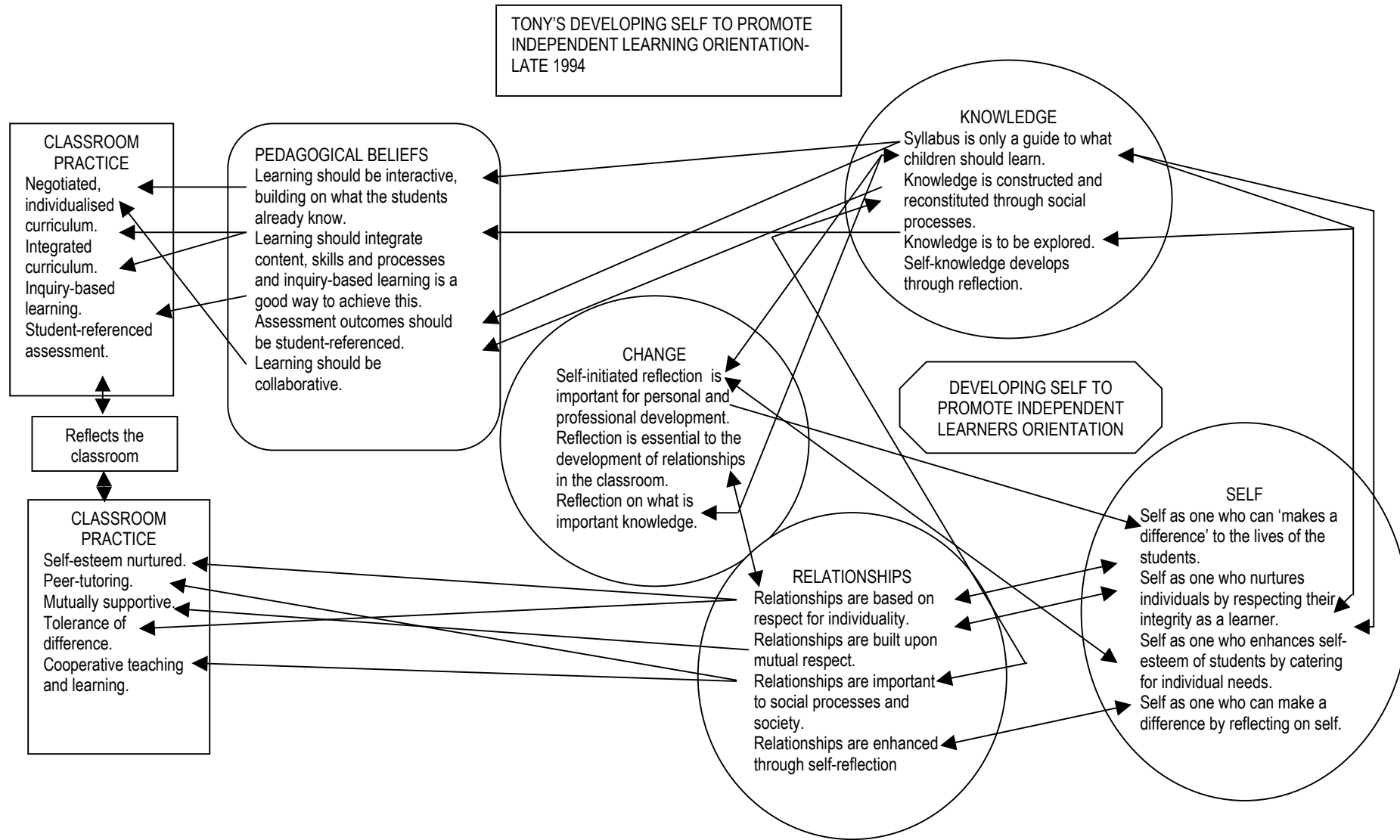


Figure 5.3



However, a change prompted by multi-age and by Tony's own motivation to improve and his desire to establish relationships based on mutual respect and reciprocal interest, resulted in a shift in his knowledge beliefs. As can be seen from the later map, Tony began to reflect on what constituted important knowledge, leading to changes in these beliefs. The function his new knowledge beliefs played in determining the theme of his orientation was evident at the end of 1994. Tony's theme could now be characterised by 'developing self to promote independent learning,' because promoting student growth also meant ensuring these students had ownership of the knowledge acquired rather than being transmitted to them by the teacher. For Tony, the importance of a relational environment in which knowledge could be constructed and reconstituted through social processes became essential for respecting the integrity of the individual student. The strategies Tony introduced, such as independent work contracts, learning centres, negotiated research projects and self-assessment and evaluation, reflected the new focus of his approach to teaching and learning. As he notes:

Phil: What image would you use to describe how you teach in multi-age now?

Tony: I don't know if there is an image. There is definitely a commitment, like I think that multi-age requires more of a commitment than other teaching. I think to just teach out of a syllabus is so much easier. It is easier to just pick up this for week five and say, "turn to page such and such and do this," and not have to think about it. So yes, there is definitely a commitment you have to have... there is flexibility, it changes from day to day and you change with it. That was all new to me.

Phil: What do you mean by flexibility?

Tony: Flexibility is definitely part of the image. Being flexible both in your planning and also to allow for difference in the

individuals and therefore to make a difference... I think the image is very different, it is process based and not all content and it is also child oriented...probably to be more flexible and to provide more and different opportunities, different ways for children to learn; not all children learn the same way (Interview 17-10-93).

Karen's 'Caring with Control' Orientation

Karen's thematic defining beliefs about self-as-teacher and relationships focused on a sense of caring which initially valued a teacher-dominated approach to the transmission of knowledge and is reflected initially in the theme, 'caring with control.' These beliefs were consistently emphasised by Karen as being influential in how she responded to her multi-age classroom. It became clear from Karen's story that her belief about caring was interlinked with her knowledge beliefs, and both appeared to be highly influential in determining the changes in teaching and learning she attempted to undertake. In this sense her initial orientation, based on the notion of 'caring with control', resembled Tony's because her knowledge beliefs acted as the key to changes in her beliefs about teaching, learning and assessment. The following orientation maps (Figures 5.4 and 5.5) highlight the role that Karen's sense of self, and her relational and knowledge beliefs, played over the two years in defining how she approached her multi-age classroom.

Karen's theme in early 1993 was influenced by her sense of self as a vulnerable neophyte teacher who was committed to developing a caring and emotionally supportive classroom, but also believed that it was her duty of care to transmit graded content knowledge from the syllabus documents. Karen's early concern about 'letting go' reflected the dilemma she experienced with balancing the need to care for the students, while simultaneously fulfilling her responsibility for community-sanctioned learning. Her theme of 'caring with control' reflected this interrelationship between her relational beliefs, her beliefs about knowledge, in which she considered herself custodian of syllabus knowledge, and her sense of self. This interdependence is reflected in her following comments:

Karen: I am finding the parents are constantly nagging me. Sometimes it is during school and I feel I have to be accountable to them. They expect certain things about covering the syllabus and they compare, which is one thing I never do. They constantly compare their own children and I hate that.

Jenny: Have you told them this?

Karen: Yes, when they approach me about it, but I still know a lot of them do it... Oh well I don't know if this is relevant now but I was just going to say that when I was talking about comparing kids, that instead of the parents being able to attack me personally, I wanted them to say it is because of the school and it is the school philosophy that we do not compare kids... I am pretty gutless that way. I do not want them attacking me because I am so inexperienced. You know they can really say that.

Phil: Inexperienced in what way?

Karen: Because I am only two years out of Uni and it is a big thing they can put on me.

Jenny: But what is most important to you? What do you want to do?

Karen: I want to care for the kids without the parents attacking me for it. I feel I need to make sure that I cover what is in the syllabus so that they can't approach me and start comparing kids because I haven't taught them what they should know (Staff discussion 10-6-93).

The role that her beliefs about self, knowledge and relationships played in determining the thematic nature of Karen's orientation is evident from the changes that emerged within her orientation during 1994. As Karen introduced student focused strategies, she became comfortable with the fact that she could enact those beliefs while allowing her students to accept some responsibility for when and how they worked on knowledge. This change is reflected in her theme of 'caring with shared control.' However, even though Karen made substantial shifts in her approach to teaching, learning and assessment, she continued to experience dilemmas—particularly with relinquishing control—when responding to the individual learning needs of the students. Her approach to change, which was externally prompted and focused on immediate issues, urged her to look for inspiration from others to find practical ways to respond to the dilemmas. An indication of the thematic nature of Karen's orientation in late 1994, in which her sense of self and her knowledge and relational beliefs determined her practice in the classroom, is contained in her following comments:

Phil: What beliefs have you changed over the two years?

Karen: I have to start scaffolding, helping them to succeed. I guess also the other thing that has changed is where I used

to think that children should be doing and knowing things at certain ages and now I am accepting more and more that they are individuals and they will only do what they want to do and when they are ready and not because of the syllabus. They might start at the beginning of the year at a very accelerated rate of learning and then they might stop for a while and it is not always because of me...what I have also found I suppose is giving them a means for finding out what they want to know and doing things they want to do (Interview 11-11-94).

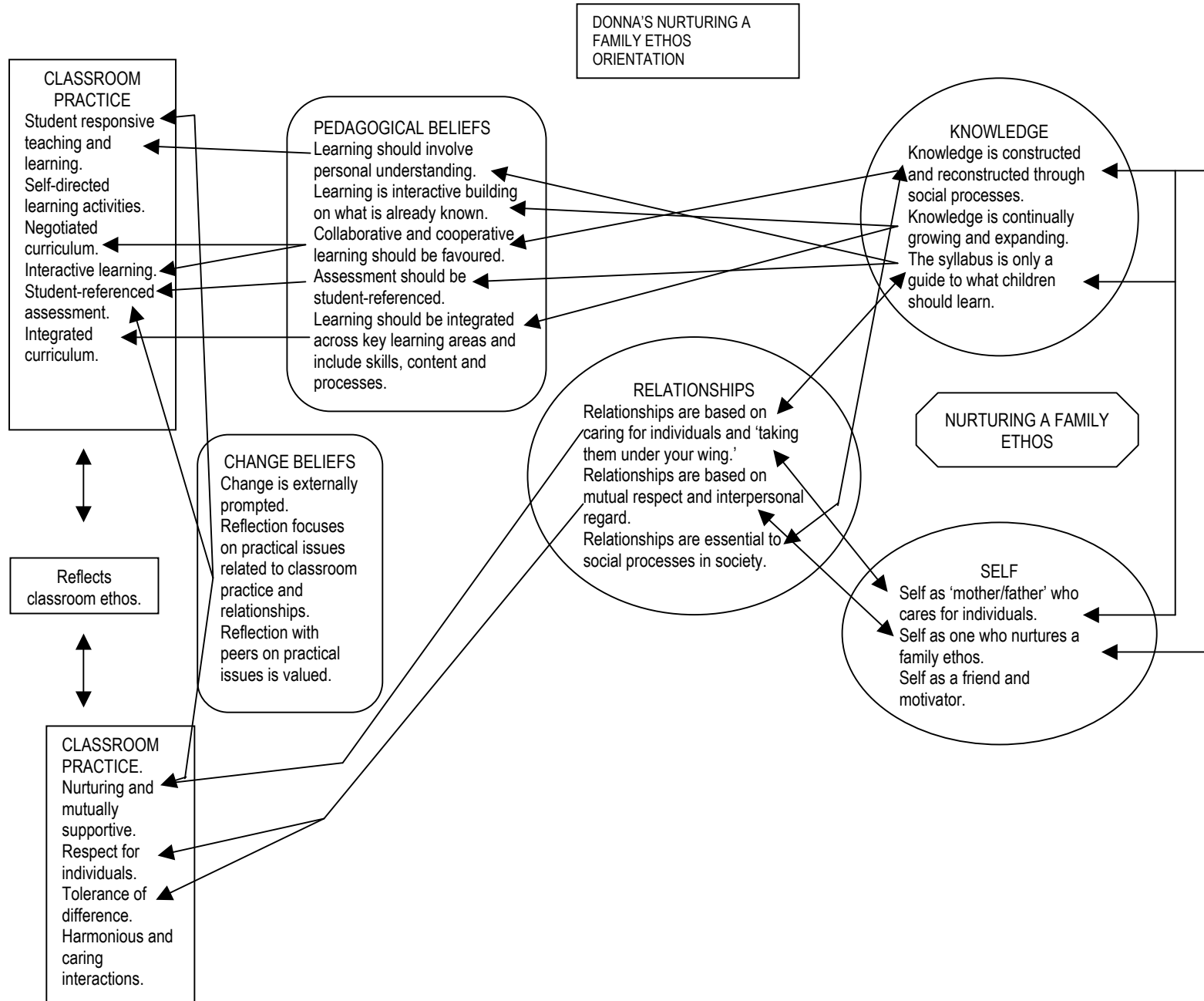
Donna, Dave and Kathy's Themes

Donna, Kathy and Dave's orientations demonstrated how their sense of self, beliefs about relationship and what constituted important and worthwhile knowledge were focal and essential to how they operated within their multi-age classroom. However, the image each of the teachers used to portray the importance of these beliefs varied and reflected their unique approach to how they related to the students. The importance of beliefs about self, relationships and knowledge in defining each of the individual themes will be elaborated in the next section of this chapter. It will also be noted that Donna, Kathy and Dave's beliefs about change did not occupy the same connections to their sense of self as was evident with Jenny and Tony.

Donna's 'Nurturing a Family Ethos' Orientation

Donna's orientation could be characterised by the theme 'nurturing a family ethos.' For Donna the importance of a relational environment in the classroom, which fostered a 'family' approach, was essential for ensuring the students could construct and reconstruct knowledge without feeling threatened. The importance of beliefs about self, knowledge and relationships in determining Donna's theme are highlighted in the following orientation map (Figure 5.6) and also demonstrate the influence these thematic beliefs had on her beliefs about teaching and learning and her corresponding practices.

Figure 5.6



Donna saw her role as crucial in establishing a relational environment based on social acceptance, trust and open communication between all the stakeholders so that she could effectively respond to the knowledge needs of the individual. Significant images that Donna used to reflect her role in nurturing such an environment are that of 'mother/father' and 'taking them under your wing'. The interdependence between Donna's relational, self and knowledge beliefs is reflected in her following comments which capture the importance for her of these beliefs in 'nurturing a family ethos.'

Donna: I think it is so important as a teacher that you have to adopt a motherly/fatherly approach. You must be able to take them under your wing, so that if they have a problem in learning or socially, whatever, they are quite happy to come to you. There is nothing worse than being scared of someone, the fear of it, you are not going to learn (Interview 25-11-94).

Donna also highlighted, in her following comments, the importance of a relational environment, provided by a multi-age approach, where the students could construct and reconstruct knowledge appropriate to their needs.

Phil: How do you go about planning knowledge that is relevant to the individual student?

Donna: When I think of curriculum I think of integration. Again it goes back to the relevancy of everything; it has to be relevant to what they are doing and how they are accepted in our family grouping. The curriculum and guidelines are certainly there for us to use and it is certainly a big help to keep us on track with content, knowledge, skills and processes, what we are suppose to be doing.

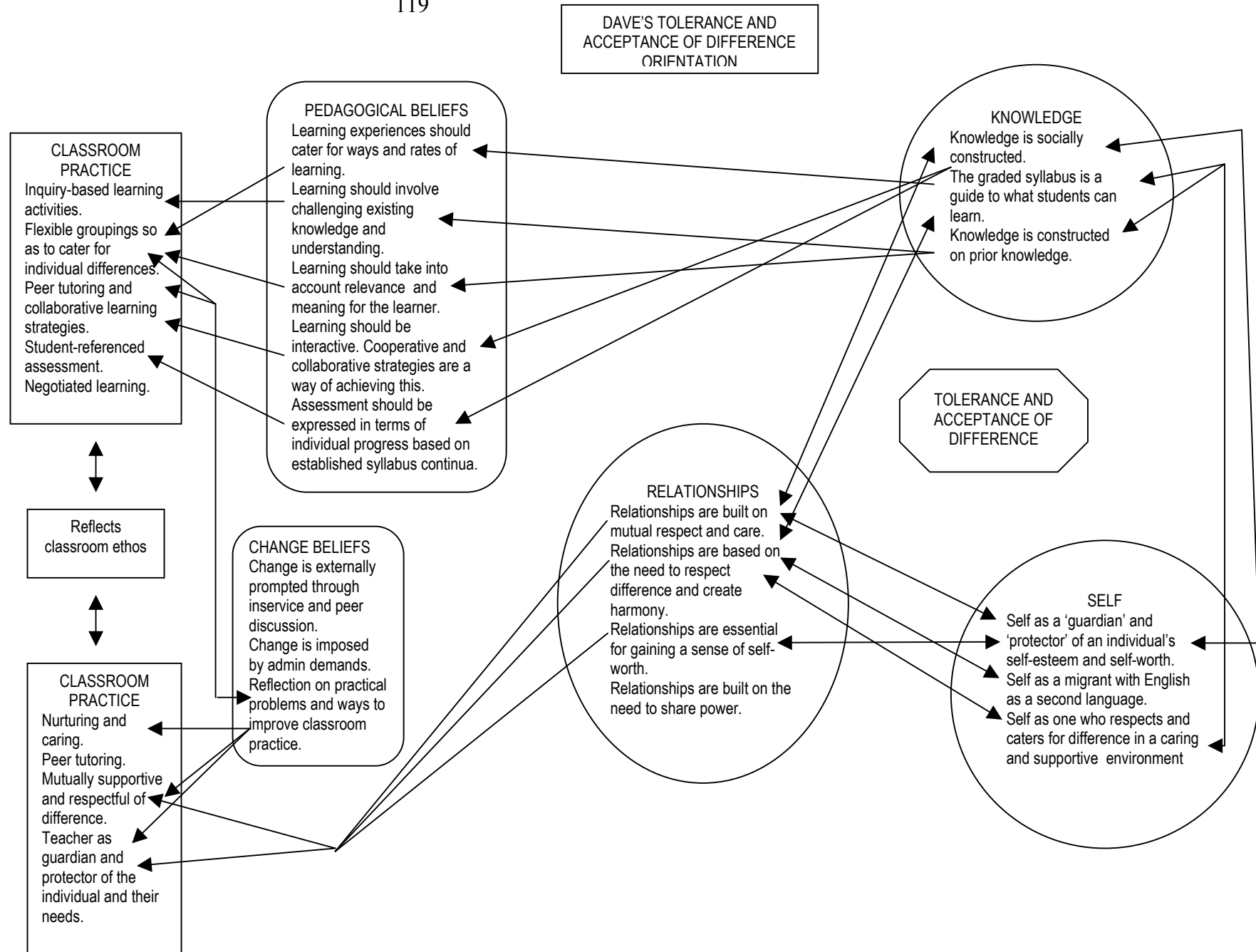
Phil: What do you mean by integration?

Donna: I suppose I mean you can't really separate out the knowledge and skills and processes and say this is grade four work. I mean if multi-age is going to work, you can't still be talking in grades and this is grade three work. It really doesn't fit in the way you think about children in a family (Interview 11-11-94).

Dave's 'Tolerance and Acceptance of Difference' Orientation

Dave's orientation was characterised by the theme 'tolerance and acceptance of difference.' For Dave it was important that he provided a protective environment in which students could be accepted for who they are, so that they could develop as individuals. As can be seen from the following orientation map (Figure 5.7), Dave's beliefs about self (in which he imaged himself as 'father' and 'protector'), relationships, and knowledge, focused on the need to respect the integrity of the individual. These beliefs determined Dave's 'professional centre' and in turn influenced how he operated within his multi-age classroom.

Figure 5.7



For Dave it was essential that, as a guardian and 'protector' within the class, he ensured there was an ethos of tolerance, acceptance and affirmation so that individual students could gain a sense of self. His following comments about multi-age reflect the significance of his beliefs about relationships, self and knowledge in determining his theme:

Dave: Our system of multi-age is a process of character-building, not necessarily character building but confidence building. I would really like multi-age to give the kids a sense of purpose.

Phil: Purpose about what?

Dave: A purpose about feeling good about themselves and feeling good about what they learn and how they learn. I would like the relations among the kids and with myself to be one where they feel safe enough to gain knowledge that is relevant to them (Interview 17-10-93)

The importance of creating a mutually supportive environment in which knowledge could be constructed was a recurring theme with Dave. Dave's following comments further reflect the emphasis that his beliefs about self, relationships and knowledge played in influencing his classroom practice:

Dave: Every child is a learner. They learn at different rates. They have one or more different learning styles to process knowledge, so we need to adapt our lessons to cater for as many as possible.

Phil: How do you think learners construct meaning?

Dave: By processing knowledge content and experiences which are meaningful for them and fit into their present knowledge concepts. It

is important that a safe and supportive classroom exists so that they can develop the knowledge that is meaningful for them. The teacher needs to find out what knowledge individuals have to make sure that individual needs are taken care of (Written response 7-8-93).

Kathy's 'Catering for the Diversity of Needs and Differences' Orientation

Kathy found the multi-age ethos of the school provided her with a suitable environment in which she could respond to the individual needs of the students. Her theme 'catering for the diversity of needs and differences' reflects the emphasis she placed on creating a relational environment to ensure the needs of the individual were respected.

From her orientation (Figure 5.8) it is evident that Kathy's beliefs about relationships, self and knowledge are highly significant in determining the theme of her orientation and in turn influenced how she operated within her multi-age classroom. Kathy continually emphasised throughout the study the importance of nurturing a student-responsive learning environment so that she could cater for the needs of her students.

Kathy's following self-nominated image of her classroom as a 'garden' reflects the importance she played in creating such an environment:

Phil: What image would you use to describe your classroom?

Kathy: I like family grouping, but Phil I thought of a nice image of the classroom through doing my 'Culture of the School' unit at Uni. The classroom is like a garden. There are many different plants, some grow quicker than others, but they all have needs and are beautiful as they grow (Written response 3-9-94).

Kathy also imaged herself as a 'key' and 'a helper' to portray the importance of her beliefs about self, knowledge and relationships in establishing her 'professional centre.' The significance of these beliefs in determining Kathy's theme are reflected in her comments about what she considered to be important knowledge:

Kathy: Most knowledge children have is worthwhile to be shared with others to learn from. Other children love to hear their friends sharing information or something they have learnt or know about a topic. Knowledge is not something owned by the teacher but must be shared, although the teacher must be able to organise knowledge for the students when needed too. It is important to me that I be able to help the children move from what they already know to something new. This is a big challenge (Written response 24-5-93).

Summary

In response to the first section of question one it has been noted that each teacher's beliefs were thematic rather than being a loose confederation. It was evident that beliefs about self, relationships and knowledge were highly significant in determining the theme of each

teacher's orientation and that with Jenny and Tony, beliefs about change and their role in the change process were also thematically important. The next section will investigate the second part of question one.

5.2.2 Core and Secondary Beliefs

The second section of question one asks:

Is a primary vs secondary (core v secondary) distinction useful when investigating a teacher's orientation?

The focus of this section is to investigate whether additional insights about teachers' orientations can be gained from adopting the core versus secondary distinction. It was noted when answering the previous question, that each teacher's theme was centered upon some but not all of their beliefs and although beliefs were interconnected in various ways, some seemed thematically central, others secondary. This phenomenon was highlighted in the orientation maps by the two-way directional arrows, which defined the thematically significant beliefs and the one-way directional arrows, which showed the influence these beliefs had on the teaching and learning beliefs and practices of the teachers. Put another way, it may be possible that core beliefs are also thematically central. However, thematic centrality cannot alone distinguish between core and secondary beliefs and therefore further defining criteria will be needed, including whether core beliefs influence other beliefs, and the nature of such influence.

For the purposes of this study *core* is defined in terms of underlying thematic importance to other beliefs. The centrality of beliefs about self and self-in-relationship (Nias, 1989; Triandis, 1989; Lipka & Brinthaupt, 1999) and knowledge beliefs (Schommer, 1994; Perry, 1988; Samuelowicz and Bain, 2001) in determining how individuals act in educational settings and manage competing imperatives suggests that beliefs differ in intensity and power (Rokeach, 1968; Hofer and Pintrich, 1997; Bem, 1970). The issue of whether beliefs

are thematically central and others are secondary is an important issue for this study because those beliefs which are core may have influenced secondary beliefs (Rokeach, 1968).

Each teacher's story, although being unique and complex, can be summarised in a framework that facilitates comparison of one teacher with another. The trends which emerged from considering each teacher separately have been collated and presented in Table 5.1 (p. 151)

Jenny

Jenny's orientation was dominated by her belief about self, which defined the importance of self-knowledge, relationships with others, and knowledge that is socially achieved, adaptive and allows herself and the students to organise the experiential world. These self-defining beliefs placed tight constraints upon her beliefs about teaching and learning and assessment, ensuring there was congruency between the two. In this sense the latter beliefs could be considered as being derivative from Jenny's core position. As was evident from her orientation map, Jenny experienced little shift in her belief positions over the two years of this study, because her beliefs were consistent with those espoused by the school, and therefore there was little impetus for substantial change.

Jenny's Core Beliefs

Jenny's orientation, rather than consisting of a loose confederation of beliefs, was characterised by an interconnected set of beliefs which were reflected in her 'personally transforming' orientation. This thematic influence was partly captured by Jenny's image of 'humanness', evident from her orientation map, which encapsulated the importance she placed on relationships, self-knowledge and knowledge that is socially acquired.

The importance of maintaining a sense of self determined how Jenny approached all aspects of her past and present professional life, particularly those which focused on relationships with herself and others. As she notes:

Jenny: ...honesty, especially to self first; learn about own qualities and accept and be honest about own faults - LIKE SELF FIRST and then accept others' differences. Relationships are about deepening your self realisation and therefore others help you to learn about humanness (Written response 4-10-93).

This dynamic belief about self, reflected through her sense of the 'I', enabled Jenny to re-explore her beliefs about how to construct and re-construct herself by focusing on the relationship of the internal to the external. For Jenny this meant a positive and reflexive image of herself so that she could contribute in a critically direct way to the community to which she belonged. At times this also meant the need to grapple with practical ways to create justice and equity within educational settings:

Jenny: The 'I' is important because if you haven't got a belief in self you won't be able to add anything or be critical of anything that might be pulling the community apart. You might have a community that might be, how would you put it? If you have got people that are sort of suppressed then they are not thinking of the 'I' and if you have a good image of the self, that goodness will come out (Interview 18-10-93).

It was the prominence of this self-defining belief which enabled Jenny to resolve dilemmas and challenges she confronted by placing self at the centre of the change process:

Phil: How do you attempt to resolve dilemmas?

Jenny: Acceptance of who you are - warts and all - leads to readily accepting others. Reflection on this then enables you to share yourself with others and the dilemmas you have (Written response 8-8-94).

As Jenny notes in her following comment, she also understood knowledge to be inextricably linked with beliefs about self, self-in-relationships and her part in the change process through self-knowledge:

Jenny: Knowledge is ever changing, an endless and divergent path, many roadways to take, many corridors to explore, many roads still to be made and laying dormant in people's minds, ready to enlighten others on their life journey (Workshop response 24-9-93).

And again:

Phil: How has your knowledge been reconstructed?

Jenny: Since last time I spoke to you, my knowledge has been reconstructed a hundred times over. I am a doubting Thomas, let me put it that way.

Phil: So you are looking at knowledge as being problematic?

Jenny: Yes but problematic to my search. If I come up against something I do not know anything about I will take in as much on that subject as I can because I do not know when I will use it in the future (Interview 6-7-93).

Jenny's Secondary Beliefs

It was Jenny's beliefs about self, which valued self-knowledge, building relationships and socially constructed knowledge, that she consistently emphasised as being central to how she approached life. It was these core beliefs that defined how she operated in the classroom context because they placed firm restrictions on her derived beliefs about teaching, learning and assessment. Her following comments highlight the significance of these primary beliefs on her approach to teaching and learning:

Phil: What are the essential elements of teaching and learning?

Jenny: Learning is BREATHING (essential for being human); ongoing; diverse; spontaneous; reflection - plenty of that!!; sharing; challenging. TEACHING. Tied in with learning (Workshop response 4-10-93).

The thematic link between her primary beliefs and secondary beliefs was evident also from her following comments, which emphasise the importance of relationships, self-regard and socially constructed knowledge within her multi-age classroom:

Phil: What beliefs characterise your multi-age classroom?

Jenny:

- *relationships between others*
- *understanding/tolerance/accepting individuality*
- *belonging—with this comes responsibility for learning about change and adapting to it*
- *sharing gift of self*
- *confidence in self, accepting strengths and weakness*
- *learning through watching and doing in a nurturing environment*
(Written response 16-5-93).

It is evident from her comments and practice that Jenny's classroom was a relational environment which valued understanding, tolerance and acceptance of the integrity of the individual as a whole person rather than a fragmented object. Jenny valued a developmentally appropriate learning environment that challenged each individual's knowledge base and ensured the students played a central role in mediating and controlling the learning. Her belief in the socially constructed nature of knowledge was reflected in her image of the classroom as a 'community of inquiry', where students could contribute to knowledge within the community rather than be recipients of pre-packaged and graded syllabus knowledge. As she notes:

Phil: Do you have any difficulties in translating your beliefs about knowledge into classroom practice:

Jenny: No, because it is a social interaction... I suppose it is the social angel. Being a society we need to help each other. All the other kids who have been there and done that can actually help those ones that have not. Even the little ones have got things they can actually help the older ones with. It is all learning and taking something (Interview 4-3-94).

Similarly her beliefs about assessment were also defined by how she understood relationships and how knowledge is constructed:

Jenny: When you are talking about assessing, you have to ask yourself what are you assessing? What am I trying to achieve in here is to have the children assess themselves. I want them to be able to tell me what they can do and if they have a problem or need they want looked at...to me assessing is about removing fear...to me assessment is very much building a relationship where the children feel free to be honest with me and let me know their needs (Parent night 2-6-94).

Jenny also acknowledged that she did not encounter any significant dilemmas within the multi-age setting of the school but found it a context that enabled her to be herself, which was central to her orientation:

Phil: I might have asked you this before, but do you think multi-age has changed your approach?

Jenny: No I believe that you have, that you yourself have aided me in my approach. I can see that you do not look on teachers as teachers but as people interacting as people and you have enabled them to enjoy the freedom of what they have got. You have enabled me to be myself (Interview 15-11-93).

It became clear from Jenny's story that her beliefs were interconnected by self-defining beliefs which determined her core position, and that beliefs also regulated and controlled how she taught, what and how the students learnt and how they were assessed. The compatibility between her core beliefs with those espoused by the school guaranteed that she did not experience any significant dilemmas and consequently was able to sharpen both her thinking and practice so as to maintain this consistency.

Tony

From Tony's orientation maps it is clear that he entered the school in 1993 with beliefs that valued a sense of self as someone 'who could make a difference'. Central to his theme was the importance of self-knowledge through reflection, building of relationships based on respect for the individuality of the students, and the passing on of content knowledge. His knowledge beliefs defined his approach to how and what the students learnt and his role in the process of learning, but they were incompatible with those favoured by the school. Over the two years of the study his knowledge beliefs changed and in these in turn

influenced his beliefs and practices about teaching, learning and assessment. By the end of 1994, as is evident from his orientation map (Figure 5.3), there was a cohesion within his orientation because his core beliefs about self, self-in-relationships and knowledge were consistent with his secondary beliefs about teaching, learning, assessment and the curriculum.

Tony's Core Beliefs

The importance of discovering and maintaining a sense of self through reflection so that he 'could make a difference' and promote growth within his students was a focal belief for Tony prior to joining St Clares and continued as a theme within his own belief system over the two years of the study. As was the case with Jenny, this central belief was linked with his belief about relationships, but unlike Jenny's, the emphasis was on the students rather than relationships within the broader community. However he also shared with Jenny a need for reflection that was inner directed and focused on self-development and enhancing relationships with students. As he notes:

Tony: I think knowledge 'about self' is important. I need to know myself, what is within. What I can cope with, my limitations, my stress levels, my self-esteem. What I can and can't do. Therefore relationships with students is more supportive, understanding and worthwhile. Time to reflect about self is important. Time to reflect about me and the students (Written response 8-8-94).

Tony acknowledged that he found the multi-age setting a suitable environment in which he could develop his sense of self by becoming a person who could 'make a difference.' For him this self-defining image meant becoming the most effective and proficient teacher he could be so that the students also could develop their own sense of self.

Tony: The most significant change agent is the inner drive to be the best teacher you can be. Multi-age gives teachers an opportunity to

more fully satisfy this drive and good teachers to 'make a difference' to each and every child. To help them reach their full potential. To let them 'be someone.' Multi-age removes a lot of the outside barriers to this and this desire is raised to new heights (Written response 8-8-94).

An essential element of Tony's image about self, as someone who could 'make a difference', was the need to respect the integrity of the individual by creating a learning environment which enhanced the self-esteem of the students. This was a longstanding belief and it led him to challenge the structures and parameters which inappropriately labelled the individual:

Phil: What beliefs have you retained since working in multi-age?

Tony: Individuality, I think that has always been a big part. I have always looked at nurturing children's self esteem as probably the most important thing we do... what you ultimately aim for, it doesn't matter what sort of organisation you have got, you are still looking at giving each individual a challenge that is ultimately achievable and something where they won't label themselves (Interview 17-10-94).

Tony's focal belief about the importance of respecting the integrity of self and the individual assisted him in questioning previously unexplored beliefs. Rather than allowing him to frame the dilemmas and challenges he confronted in the multi-age setting in one way only, his self-defining belief provided several possibilities that he had not considered in the conventional education system. A significant belief which he began to challenge was the nature of the knowledge the students needed to learn and how they acquire it. It was at this stage that he realised there was a rift between his self-defining beliefs and his teaching and learning beliefs, with knowledge, as a core belief, having a strong influence on these other beliefs. As is evident from the summary table, Tony entered St Clares with beliefs

that emphasised and valued the transmission of the content knowledge defined in the curriculum documents. His knowledge beliefs, via certain teaching and learning beliefs, resulted in teaching that was direct and the classroom environment was structured so that students could accurately reproduce material in a testing situation.

The growing interdependence between Tony's knowledge beliefs and relational beliefs became clear as he attempted to reconcile the tension between the two. The result of his deliberations is expressed in the following:

Phil: Have there been any changes in the kind of knowledge you think is worthwhile for the students to learn?

Tony: My ideas and thoughts in this area have been dramatically changed by multi-age. In the traditional system I would have rarely asked myself this question because the syllabuses were there. However multi-age challenges you to think about this. There can be no blanket answer to this question as the individual student needs to be taken into account. This has always been important for me but now I can put it into practice (Written response 8-8-94).

Secondary Beliefs

Once Tony had begun to challenge his own belief about the nature and significance of the syllabus content knowledge he was transmitting in the classroom, a notable shift appeared in the other beliefs he held about learning and his role in the learning process. He began to value the processes involved in knowledge construction, and established classroom strategies that utilised peer tutoring, cooperative teaching and learning and student-referenced assessment practices. This change, evident in his comments towards the end of the study, indicated that by that time there was a significant connection between his relational and knowledge beliefs. It was also clear that his knowledge beliefs were highly

significant in the way they influenced his teaching and learning beliefs which in turn influenced his classroom practice:

Phil: What beliefs are important for your approach in the classroom at the end of two years?

Tony:

- *individualised instruction and more importantly evaluation*
- *cooperative planning with the students*
- *the ability to allow each child to succeed and not be branded a failure due to averages*
- *a more relaxed discipline*
- *taking responsibility for learning behaviour away from the teacher and placing it with the student*
- *watching the students being able to find their own knowledge and use it through more research and independent work (Written response 8-11-94)*

The cohesion that developed within Tony's orientation over the two years is obvious from the summary table for late 1994, which demonstrates the influence of his core beliefs about self, change and his role in the change process, relationships and valued knowledge, with the latter being the key to effective change. It was the changes in his knowledge beliefs that led to significant shifts in Tony's secondary beliefs about teaching, learning and assessment, in tandem with teaching and learning practices. As he notes in late 1994:

Phil: What do you think are the main images you would use to describe teaching and learning?

Tony: Consistent but not overpowering. "I don't know everything but I'll help you find out." Teacher as learner. To teach is to discover. Organiser - facilitator. To challenge, to discover. Friend and learning companion (Written response 6-8-94)

Donna

Donna's orientation was dominated more by constancy than change over the two years of the study. As was evident from Donna's orientation map, her theme was based on 'nurturing a family ethos,' and was partly reflected in her self-nominated image of 'mother/father.' It was also evident that her knowledge beliefs were connected with her relational beliefs and sense of self. Donna consistently identified these core beliefs as being essential to how she approached her multi-age classroom and framed how she understood her role, as teacher, in the process of learning and assessment. It was the influence of these core beliefs which allowed Donna to operate in the multi-age classroom without any significant dilemmas over the two years of this study.

Donna's Core Beliefs

Donna's beliefs, rather than being a loose collection of beliefs, were thematically defined because of her beliefs about self, self-in-relationships, and the socially constructed nature of knowledge. Donna's image of herself as 'mother-father' reflected the importance for her of a relational ethos within the classroom. Donna saw her relationships with the students as essential in establishing an ethos which valued social acceptance, trust, tolerance of difference and open communication:

Donna: Well family groupings is very important. I would like to see my classroom as a family, as a comfort zone where they come if they

have got problems to see me. I think of it almost as a safe zone. I think that is very important atmosphere you have to adopt in any classroom. I guess it is to have that security blanket that they can come in and feel safe within the four walls (Interview 14-5-93).

A fundamental element of Donna's focal belief about relationships, which she shared with Jenny and Tony, was the importance of respecting the dignity and worth of the individual student in a socially interactive environment. Donna found that the culture of the multi-age school provided an appropriate environment in which she could enact this belief:

Donna: Multi-age gives so much variety, so much individualisation. I think that having children from different ages in the one room really provides for a lot of growth in every age group... the younger children are mixing socially and academically with the older children and the older ones are nurturing and teaching the younger ones and that is very important (Interview 14-4-93).

Donna's focus on relationships also recognised the importance she placed on the socially constructed nature of knowledge. Her beliefs about what knowledge was valued and how it was constructed are reflected in her following comments:

Phil: What knowledge is important for teachers to develop and bring to the teaching/learning context?

Donna: Knowledge that is relevant for the students to know when they are ready. Understanding each child, their needs and what they have experienced .

Phil: What knowledge is worthwhile for students to have?

Donna: Real life experiences and how to cope with these experiences. Me knowledge and how to use this knowledge to build confidence, self esteem and worth. Problem solving knowledge (to cope with crisis and dilemmas). Knowledge that will assist them to be capable citizens with high values and morals. Knowledge about how to find information that is relevant to what they need (Written response 6-8-93).

Secondary Beliefs

Donna's beliefs about relationships, linked with her beliefs about worthwhile knowledge, framed and influenced her teaching and learning beliefs and in turn her classroom practice. As Donna notes when describing the benefits she encountered working in multi-age:

Donna: My focus on what things are important has really developed. I don't have any nagging feelings that for example children A, B, C, are grade three children and they haven't grasped multiplication yet! I don't have these feelings in the back of my mind or thoughts of, 'I haven't taught enough because they don't know this yet! I find multi-age wonderful in that you have the same group of children for a couple of years and at the start of the next year you can start off where they are at, regardless of their year level, and you know them too. You can treat them as individuals rather than a number in a box (Written response 8-10-94).

Donna also valued an approach where children were portrayed as active constructors of personal knowledge, working autonomously and in control of their own learning within a mutually supportive environment:

Donna: The students will learn if there is a social climate that encourages them to work at their level and be accepted for what they can do, not for what they can't. I try and encourage this in my multi-age classroom by not putting labels on the students. Also if there are topics of interest and relevance, that relates to previous experiences. Independent thought and opinions no matter what the age (Written response 4-3-94).

The thematic nature of Donna's orientation was determined by her core beliefs about self, self-in-relationships, and knowledge that students could use in the lived world. It was these beliefs, evident on the orientation map, that influenced her beliefs about teaching, learning and assessment and therefore these latter beliefs could be considered derivatives of the primary beliefs. These secondary beliefs and practices were also susceptible to change as they were subject to contextual pressures to ensure they were consistent with her core beliefs. As Donna comments when noting the content of her reflections, which focused on the practical challenges she confronted:

Donna: I like talking to other people about things, especially the other teachers. That is the way I reflect, I get with Dave and reflect with him about what happened to me today, what is worrying me and how I can make the classroom a positive learning one, what strategies am I going to have to change. As I go to bed I will also think what happened and how am I going to get over it. How am I going to communicate better in the classroom, what am I going to change to be a better teacher. (Interview 26-7-93).

Kathy

Kathy entered St Clares at the start of this study as a neophyte teacher. The beliefs that she emphasised as being integral to how she viewed the world, both before and after becoming a teacher, were based on her sense of self, how she related to others and the knowledge she held as worthwhile. It was these core beliefs that personally themed her orientation and determined how she interacted in the classroom and how and what the children learnt. As is evident from the map, Kathy experienced little change or movement in her belief patterns over the two years of the study, although she did experience practical challenges because she continually sought ways to ensure her teaching, learning and assessment beliefs remained consistent with her beliefs about self, relationships and knowledge. It was the nature of her teaching and learning beliefs which suggested that they were influenced by her core beliefs.

Kathy's Core Beliefs

Kathy's orientation (catering for the diversity of needs and differences) was defined by her beliefs about self, self-in-relationships, and how and what knowledge was to be considered worthwhile. The self-nominated images of 'a helper', 'nurturer' and 'key' were used by Kathy to portray the significance of relationships to her beliefs. This was a belief that had been a constant for her within her personal biography and had been the motivation for becoming a teacher. It was fundamental for her to ensure that the classroom fostered a relational environment that was mutually supportive. Kathy found that the image of a family, similar to that used by Donna, captured the significance of relationships for her in the multi-age classroom:

Kathy: The notion of helping each other (peer tutoring) is very important and children see by helping each other the whole classroom is better off than if the classroom activities are all teacher-oriented. Also every person is important and has something to offer the rest of the group (the teacher isn't the most important person).

In a family you would like to think that any problems that arise can be openly discussed and try to find a solution together. The point of really knowing each other and understanding each other's needs is family oriented. The older children feel a real responsibility towards helping the younger members of the class (Written response 18-2-94).

A significant element of Kathy's relational belief was the need to respect the importance and dignity of each student and to cater for their individual differences and developmental levels. Kathy's image of the classroom as a garden captured the pivotal role this belief played in her approach to relationships. Kathy also recognised that a relational environment within the classroom was important in the knowledge construction process because this process takes place in individual contexts and through social negotiation, collaboration, experience and reflection:

Kathy: We all construct meaning in different ways and so with a class of twenty nine children you have to be flexible enough to help and assist these many ways of constructing meaning. The children will do this by reading material, by discussing, through questioning and through silent reflection (Written response 24-6-94).

Kathy acknowledged the thematic connection between her relational and knowledge beliefs in the following response:

Phil: What do you think are the cognitive and affective benefits of multi-age?

Kathy: It is easier for you to let the children progress with their work, especially written tasks. The working atmosphere of the classroom, the discussions, even questions get the minds thinking and stir up

the search for knowledge. The working classroom is a cognitive benefit in itself. The younger members of the class hopefully see the benefits and learn knowledge and how to be co-operative, how to communicate with their peers to get help, ideas and therefore everyone benefits by the positive outcomes (Written response 5-10-93).

Kathy's Secondary Beliefs

Kathy's beliefs about self, relationships and knowledge were pivotal to how she approached teaching and learning within the classroom. Her beliefs about teaching and learning, reflected in her practice, valued a developmentally appropriate approach which recognised the importance of power sharing within the classroom through the use of cooperative learning and peer tutoring. As Kathy acknowledged, she did not see her orientation to teaching, learning and social relations as exclusive to multi-age because she had brought these beliefs with her:

Phil: What do you think are the key elements of a multi-age structure?

Kathy: Not only of multi-age but for all situations where people come together to learn; that we are different, we construct meaning in a different way, therefore we should be treated individually. Co-operative learning. In any classroom it wouldn't be fair to expect that all children will learn to their capacity by teacher oriented lessons. There must be opportunities for discovery learning and inquiry (Written response 3-9-94).

The importance of good relationships between herself and the students repeatedly entered Kathy's accounts of teaching and influenced her interpretations of classroom practice. Her image of a "key" reflects this interrelationship between her beliefs:

Kathy: You are like a key, you open doors for them. There is no way you can teach them all they need to know. You are there just to help them, like I said, the key to open the door for them. People say to me, you do not really sound like a teacher, you sound like you are guiding them to do things, you are not teaching them (Interview 4-9-93).

Kathy's core beliefs about self, self-in-relationships and knowledge enabled her to create a multi-age classroom environment which valued collaborative and cooperative learning, interpersonal regard, and respect for individual differences and yet also involved instruction, management and control. Even though Kathy continued to experience some challenges with these often conflicting approaches to teaching and learning, she stressed the importance of reflection as a means of negotiating these challenges within the classroom. The tension she encountered in attempting to maintain this balance is reflected in her following comments:

Kathy: I believe you should not be over friendly with any grade straight off at the beginning of the year. I must still be sure that I give the children the impression that I am very approachable and respect their individuality (Journal 29-1-93).

Later in her first year Kathy noted how she reflected on the challenges to her practice presented by developing an 'open' classroom and the necessity to be flexible with her teaching and learning practices:

Kathy: I reflect about the challenges I have faced all the time. Multi-age is great I think, especially if the child had been here since first year. For those who have not, I have realised they need more direction and guidance, like I do because I am new too. Sometimes the 'openness' of the classroom can be overwhelming and I need to change the way I teach. For example recently I had to stop all group work and start direct teaching, with them all sitting in silence. I am happy though with the way my teaching has come along and I respond to their individuality (Written response 17-6-93)

Dave

Dave's orientation was defined by the theme 'tolerance and acceptance of difference.' Dave's self-nominated image as a 'protector' and 'father' reflected how he understood his role in ensuring there was a mutually supportive climate within in the classroom whereby students could acquire knowledge that was relevant to them. These beliefs influenced Dave's beliefs and practices about teaching, learning and assessment and were subject to scrutiny as he investigated ways to ensure his practice in the classroom was consistent with his theme.

Dave's Core Beliefs

Dave's experiences of multi-age were similar to those of Donna and Kathy and did not result in any significant shifts in his beliefs prior to and during the time of this study. As was the case with Kathy and Donna, he highlighted the importance of his relationships with the students and his sense of self as a 'father/protector' as being a central focus for him. This approach to relationships was partly shaped by his personal biography in which he had experienced alienation in the classroom because of his immigrant background:

Dave: It was horrible because it happened a lot. Now I am really aware of not doing this to kids. I don't want kids to have to suffer like

I did in those early years. I try and be the kind of teacher who cares for them (Interview 6-5-93).

His self-defining image of “protector” and “parent” reflected the significance of his role in relationship with the students:

Phil: Is there an image you could use to describe your role?

Dave: I suppose a protector. Does that make sense? When the children have difficulties. I would like to think that I am protecting their feelings and things like that. What have other teachers used?

Phil: Much the same. Some have used the image of a parent or facilitator.

Dave: Yes, I suppose I would also use the image of a parent, more like a father (Interview 6-5-9).

An important element of Dave’s relational beliefs was respecting the integrity of the individual student and ensuring that a classroom ethos existed which responded accordingly. He found that the multi-age philosophy of the school provided this:

Dave: I just thought of an image that is directly related to our own school motto. You know the concept of simplicity and harmony, peace and sharing. If you have peace and harmony in the room, which I think multi-age is trying to do, that will encourage a learning environment, a social environment that will help things run smoothly. I see myself as one who is responsible for creating this harmony by making sure everyone is accepted (Interview 25-11-94).

The thematic link between his relational beliefs and his knowledge beliefs was evident because he developed a classroom environment that recognised the socially constructed nature of knowledge. The flexible nature of multi-age also assisted Dave in responding to the individual learning needs of the students by grouping them in levels on ability within key learning areas such as maths according to where they were with respect to the syllabus:

Phil: What do you think is important knowledge?

Dave: I think knowledge is what the students come in knowing. If a child is ready to accept a certain level of knowledge or apply the knowledge. For example with a maths concept, if you want to talk about parallel lines, if they are in fourth year and this is a fifth year concept, if the knowledge acceptance is at a fifth year level where they can take it fine. If it is not we talk about it when they are ready seeing it is a multi-age classroom. It is really a matter of seeing when the individual student is ready (Interview 14-5-93).

Secondary Beliefs

Dave's relational and knowledge belief, which emphasised mutual respect and support for the individual in a socially interactive context where knowledge could be constructed and reconstructed, influenced how he understood the learner and his role in the process of learning. Within his classroom he endeavoured to cater for individual developmental rates and encouraged peer tutoring, autonomy and cooperative learning so as to maintain and develop the self esteem and confidence of the individual students. Dave saw his role in the learning process as one who facilitates learning rather than transmits knowledge:

Dave: There is learning from us as teachers, there is learning from their peers, there is learning from their own experiences, from the environment they are in... it is not just us standing at the front and

wandering around and saying this and that and the other. It has got so many aspects to learning and in some ways I think we have to get away from the mentality that the teacher provides all the input (Interview 17-10-93).

His approach to reflection and change focused on the challenges to his practice within the multi-age classroom and how he could best respond to the learning needs of the students:

Dave: We reflect everyday. For example I reflect on how the day has gone and individual kids, like he could do better with his research or she has completed a story draft really well and what can I do with it.

Phil: Do you think reflection helps you understand or make meaning out of the problems you may encounter with multi-age?

Dave: I suppose it is a continual learning process, depending on the structure and personalities in your multi-age class. That is a really hard one to answer but I suppose it is reflecting on the individuals in the class and how you can support them (Conversation 6-5-93).

The importance for Dave of creating a relational ethos within his multi-age classroom that catered for the social, emotional and academic needs of the students appeared to be a dominant theme within his orientation. It was for this reason that he did not experience any significant clash of beliefs during his time at St Clares.

Karen

Karen's orientation was defined by the theme 'caring with control' which reflected how her beliefs about relationships were interlinked with her beliefs about knowledge. From her orientation maps it is evident that her initial beliefs about relationships and knowledge

informed and influenced how she understood the multi-age classroom, with her knowledge beliefs being the key to changes in her beliefs and practices about teaching, learning and assessment. By late 1994 it is clear Karen had shifted substantially in her interpretation of how students learned in the classroom—from a teacher dominated approach, to one in which the students assumed increased responsibility. Her orientation at the conclusion of this study was thematically linked by her core relational and knowledge beliefs, with her secondary beliefs and practices about teaching, learning and assessment still subject to influence and change from her core beliefs.

Karen's Core Beliefs

Karen's expressed belief about her role focused on the need to provide a caring, interactive learning environment that responded to the needs of the individual. However, her notion of caring was linked with her belief about how and what knowledge was to be taught to the students. For her, caring required adherence to the approved syllabus because the syllabus constituted the knowledge to be learned and it was her role to ensure that her students studied the approved grade level syllabus. It was her beliefs about what constituted important knowledge and about her role as a guardian of the curriculum that emerged as thematically defining for Karen. As became evident from Karen's story, her knowledge beliefs became stumbling blocks to full individualisation. Her following comments capture the importance of her knowledge and relational beliefs:

Phil: I would like to hear your reactions to the first three weeks of you multi-age experience

Karen: Well it was really different with this class because they are first year, second year and third year and I just had older kids last year. So I found coming into a multi-age class this year much harder. To incorporate the multi-age philosophy I found we had the first years out a lot to work with them. They needed pulling into routine

and before we could get them to learn anything from the grade one syllabus we had to get them into a routine.

Phil: So it is mainly the first years that are causing you a difficulty at this stage?

Karen: Yes, it was because the second and third years did it last year, as they kind of know the buddy system and they know to a degree how to cooperate, whereas the first year cannot cooperate...the first years learn so much in that first year. I would hate any of the first year syllabus to get missed because the other kids are there and that's what I am really on about at the moment and I feel that the first years are being taken out a lot. At the moment they are basically at the same level. We can't really say this child is advanced or this child is advanced even if they can work with the second year kids. Although we can say some of the second year kids are not going down to the first years. My problem is I need to know how I can take care of the kids and make sure that they cover what is needed from the first year syllabus (Interview 24-2-93)

Secondary Beliefs

Karen became cognisant of the inadequacy of her practice within the multi-age classroom as she attempted to implement those aspects of multi-age philosophy that were consistent with her espoused beliefs about teaching:

Phil: What are some of the dilemmas and challenges you have experienced so far?

Karen: It is great in theory but in practice it is not OK. It sounds great in theory but I would like to see somebody do it or explain how to do it in practical terms. I do not know, I am really confused... It is not

what I want ideally and I am never happy until it is exactly what I want in my mind, but the way of getting there is the problem. In my mind, I would like to have things that are interesting, and kids are working at their own pace and I am teaching to individual needs. But it is just the amount of kids. It is overwhelming (Interview 3-6-93).

Karen's dilemmas emerged as she attempted to structure a classroom that was student responsive, yet orderly. Her efforts to move from a teacher-directed approach—in which she had control over the process of learning and over with whom the student discussed their understanding—to one where the students can make their own choices and learning options proved difficult for her:

Karen: This is the first time I have organised a process writing lesson in which I have not directed the first years with a topic. Up until now I have always nominated what and how they would be writing about. I always give them the lead in. I am concerned. Do you think it is alright to let them go? You know me, I really find it hard to let go. I like to be in total control of what they learn but also to make sure I look after them (Conversation 26-5-93).

Later she was to acknowledge that covering the content in the approved graded syllabus documents was also a constraining factor in individualising the teaching and learning process:

Phil: What are some of the inhibitors that might prevent you from creating autonomous and independent learners?

Karen: It is difficult with the kids I have got because they are from three different year levels and I am not sure how I am going to cover all that is in the syllabus. I am trying to work out ways to help them

become responsible for their own learning (Written response 18-6-93).

Karen's attempts to relinquish control, over what and how the students learnt in the classroom, were also linked with her own self image of the vulnerable neophyte teacher who was being judged by parents in terms of her ability to control children and maintain discipline:

Karen: I do not want them attacking me because I am so inexperienced. You know they can really say that.

Phil: Inexperienced in what way?

Karen: Because I am only two years out of Uni and it is a big thing they can put on me. I reckon even if it was unfounded they are still thinking that (Staff discussion 10-9-93).

Karen continued to feel uncomfortable about her role as teacher over the two years of this study as she oscillated between the belief that power within the classroom resided within herself to determine the objectives and outcomes of the learning process, and the need to respond to the individual needs of the students that were not based on grade levels. However a notable shift in her teaching beliefs was apparent as she began to transfer power to the students, rather than dominating how they learnt and with whom:

Karen: I think it is all the challenges that multi-age threw at me. I think if you do not go through that you get stressed and you do not know what to do. Unless you go through it you won't reach an understanding. I was quite happy at the start of the year and I thought I knew what I was doing. I would not have had a change of my style of thinking. I would have just kept my old way of thinking

where I was still the one in charge of the teaching (Interview 17-11-93).

She noticed that, with this 'new understanding', a relational climate began to develop within the classroom which was characterised by personal autonomy, mutual respect, peer tutoring and cooperation. This change indicated that her notion of 'caring' was moving from teacher-driven to a student-initiated focus, or from over-protection to nurturing.

Karen: Teaching. I mean I was doing a lot of it at the beginning of the year. I would have spent most of my time at the blackboard. I do not think I have used the blackboard in three weeks. It is completely new to me, you kind of blend in with the kids (Interview 7-10-93).

And in a later interview Karen used the images of "facilitator", "blending in" and "scaffolding" to indicate that she was attempting to move from a teacher nominated content domain to student involvement in knowledge:

Karen: I think that the role of the teacher is very important because we have to organise and facilitate the learning experiences, so the kids can get something out of it. What we teach is not necessarily what is learnt, I agree with that, but we still have an obligation to provide experiences that kids might learn from. I have to start scaffolding, helping them to succeed. What has changed in my philosophy, I suppose, is that I think I am letting them take on more responsibility for how they learn (Interview 11-11-94).

However despite the changes in her approach to teaching Karen continued to experience dilemmas with individualising the curriculum in a way required by multi-age. Her equivocation was evident, for example, in her approach to assessment which, despite a substantial shift towards student-referenced assessment, still retained aspects of cohort and grade-referencing, as the following extract from a parent interview demonstrates:

Karen: At the start of the year Jessica was a lot worse. We have some second years who are working at a third year level. Jessica is Jessica and is working at her level. I have tested her and her sounds are at a late grade one level and her reading is with the grade one students who are a little bit ahead of the other grade ones... I don't tell her she is not doing grade two work because that won't help her. Treat her as Jessica and not drilling into her that she is a second year (Observation 10-9-94).

Karen also noted at the end of her second year at St Clares that she felt uncomfortable about students taking control of the content of learning:

Karen: Some days I still want to know what everyone is doing and I want everybody to be doing the same thing too. I expect there to be outcomes, physical outcomes. I know some teachers don't think that way, but for me and to be accountable to parents, like why they are at school, I think they have got to have done something (Interview 11-11-94).

This ongoing clash highlighted how her knowledge beliefs were enmeshed with her beliefs about caring and that both were mutually defining and constraining. It was these two belief domains that seemed to be thematically significant for her orientation and reflected in the theme 'caring with control.' For Karen, caring meant more than nurturing, it meant ensuring that her students learned what the syllabus documents required for children of the age-grade involved. Yet, clearly, she had shifted substantially in *how* students learned in her classroom. The strategies she introduced valued a student focused approach rather than one in which she initiated and controlled the process. It was these ongoing changes in her practices and beliefs which began to provide the cohesion that was evident within her orientation by the end of 1994. Her orientation at this time could be defined as 'caring with

shared control' but with a shift in her beliefs about how she understood the nature of 'control.' For Karen the notion of control now meant delegating some responsibility for the learning process to the students.

5.2.2 Core and Secondary Beliefs of Individual Teachers

It was evident from the individual teacher's stories that their practice was determined by beliefs that tended to support each other, amongst which beliefs about self and self-in-relationships, and knowledge beliefs, lay at the thematic heart of each teacher's orientation. These core beliefs were thematically central and influenced other or secondary beliefs and practices within the multi-age classroom.

Although there were similarities between the teachers, each displayed an idiosyncratic orientation to teaching, learning and social relations. Initially I considered focusing on the beliefs that emerged as thematically central or core to differentiate the teachers, but this proved unhelpful in understanding the complexity and uniqueness of each teacher's practice. Rather, a study of the entire belief system or orientation, including core and secondary beliefs, was required in order to understand each teacher in the contextual setting of this study. The table and comments below outline both the core and secondary beliefs for the individual teachers in this study and provide a suitable framework for differentiating the teachers.

Table 5.1 Rationale for Individual Orientations

TEACHER	CORE BELIEF(S)	RATIONALE	DERIVATIVE/ SECONDARY BELIEF(S)
JENNY	self self-in-relationships knowledge change	Self-defining beliefs emphasised as essential and placed tight constraints on derived beliefs. Change internally generated. Reflection on self	teaching learning assessment curriculum
TONY	self self-in-relationships knowledge change	Self and relationships emphasised as essential. Knowledge beliefs as key to effective change of secondary beliefs. Change internally generated. Reflection on self.	teaching learning assessment curriculum
KAREN	self self-in-relationships knowledge	Caring relationships essential. Knowledge as key to effective change of secondary beliefs. Secondary beliefs amenable to ongoing change. Change externally prompted.	teaching learning assessment curriculum change
DONNA	self self-in-relationships knowledge	Relationships and socially constructed knowledge essential for effective teaching and learning. Secondary beliefs amenable to ongoing change. Change externally prompted. Reflection context specific	teaching learning assessment curriculum change
DAVE	self self-in-relationships knowledge	Relationships and socially constructed knowledge essential for effective teaching and learning. Secondary beliefs amenable to ongoing change. Change externally prompted. Reflection context specific	teaching learning assessment curriculum change
KATHY	self self-in-relationships knowledge	Relationships and socially constructed knowledge essential for effective teaching and learning. Secondary beliefs subject to change. Change externally prompted. Reflection context specific.	teaching learning curriculum change

Summary

It was possible to interpret the nature of teachers' orientations in this study by comparing and contrasting their thematic characteristics as determined by their core and secondary beliefs. Both Karen's and Tony's orientations had similarities in that their core beliefs were both thematically defining and also acted as a key to effective change for their secondary beliefs about teaching, learning and assessment. However, Tony's approach to change, unlike Karen, also was a core belief because he expressed an internally generated desire to improve both personally and professionally. Donna, Dave and Kathy's orientations were

similar in that they expressed a thematic consistency determined by their core relational and knowledge beliefs. It was the relationships between their individual beliefs and the school's beliefs that ensured there was internal coherence within their orientations. Jenny's orientation on the other hand was unique because it was bounded by her theme of 'personal transformation' (humanness) which encompassed her core beliefs about self-regard, self-knowledge, change which was internally generated, relationships and valued knowledge. It was these core beliefs that maintained a sharp control over her secondary beliefs about teaching, learning and assessment and ensured they were compatible with the multi-age ethos of the school.

It was the interplay between the beliefs and practices of individual teachers and the school context which provided the challenges and opportunities for professional growth that was the focus of this research and therefore requires further scrutiny. The second question in this section begins to address the issue of change and will be elaborated as subsidiary questions are analysed and discussed.

5.3 THE CONTEXTUAL INFLUENCES ON TEACHERS' BELIEFS AND PRACTICES

5.3.1 The Role of Dilemmas and their Influence on Teachers' Orientations

The second question in this section investigates how the press of the ethos favoured by the school influenced teachers and asks:

How did the multi-age environment influence teachers' beliefs and practices?

The first section of this question will investigate the role of dilemma/conflict between the teachers' and the school's beliefs in prompting change. The multi-age approach of the school promoted beliefs and practices which aimed to respond to each child as a unique person with an individual pattern of growth (without being labelled by 'grade' designations) personality, learning style and family background. How the individual teachers responded to the competing imperatives presented by the multi-age philosophy was varied and complex because it was not only the dilemmas that needed to be considered but also how the teacher's orientation influenced the process of change. This multidimensional notion of change—where the range of interconnected factors including sense of self, relationships, knowledge beliefs and how individuals position themselves in the change process —has been acknowledged by others (Lampert, 1985; Halliwell, 1992; Johnston, 1989; McLean, 1999) and will be addressed in subsequent sections.

Tony

Tony's early experience of multi-age presented him with several dilemmas because significant aspects of his belief system were at variance with the school's philosophy, particularly those dealing with the dominating influence of the syllabus documents:

Tony: The thing that I am really worried about is covering the syllabus, but that was a concern for me because I have been doing it

for so long. I immediately worried that by the end of grade seven we should have covered this and this best (Interview 1-3-93).

So, for Tony, change was initially prompted by the dilemma of how to negotiate syllabus bound content knowledge in a multi-age classroom. As he subsequently acknowledged, it was necessary to change in order to survive:

Phil: Tony you have come into a multi-age setting and have changed aspects of your approach.

Tony: It would be hard not to. I cannot see how you could not change, unless you drove yourself mad teaching three different year levels... other than driving yourself into the ground you have to change (Interview. 5-6-94).

However, as Tony found, his initial strategies for responding to the knowledge needs of the students, which attempted to address the 'what' of knowledge, compounded the dilemmas he was experiencing:

Tony: ... having three levels I immediately locked into the year seven syllabus, which sort of appeared to work for a little while. My concern was if I locked into the grade seven, then next year did the grade six and the year after the grade five one, then by that way by the time the kids were with me for three years they would have covered the whole lot of it (Interview 1-3-93).

Further dilemmas emerged with the 'how' of knowledge as Tony began to implement a student-focused approach:

Tony: Another problem I have had is keeping the kids on task. Unless you are sort of watching them, they will just wander off. I mean that is just the nature of kids, they will go onto something more interesting that catches their eye; they will do that. The dilemma is, should you be letting them do that or should you be making them stay on task, and if you are wandering around keeping everybody on task then you are not spending time with anyone (Interview 1-6-93).

The strategies Tony devised in response to his change of beliefs about content graded knowledge were associated with establishing learner-teacher relationships that enabled him to meet the needs of the individual student. As he notes when describing his experiences with allowing the students to pursue their own research and individualised topics, after he had provided them with the strategies:

Tony: The beauty of what I am doing now is that it throws the responsibility back onto the kids. Like with the literature unit that I put in to balance the research part, the kids have really thrown themselves into it because it is their creation. They have really amazed me, I have amazed myself.

Phil: How much direction have you given them?

Tony: Very little really. Like I have given them deadlines with their chapters and basic chapter headings but the rest is all their's. It is a bit of a breakthrough for me really.

Phil: In what way?

Tony: Well let's face it, I have always been used to standing up here and telling them what to learn, but now I am really seeing their

creativity. Admittedly some of them are pretty hopeless, but a lot of them really surprised me (Conversation 8-8-93).

Unlike the teachers in Wagner's (1987) study, where efforts to deal with dilemmas led to 'knots' in thinking about practice, Tony did not appear to be immobilised by challenges to his beliefs and practices, on the contrary:

Phil: Have there been any changes in the kind of knowledge you think is worthwhile for the students to learn?

Tony: My ideas and thoughts in this area have been dramatically changed by multi-age. In the traditional system I would have rarely asked myself this question because the syllabuses were there. However multi-age challenges you to think about this. There can be no blanket answer to this question as the individual student needs to be taken into account (Written response 8-8-94).

Karen

Karen, like Tony, was initially motivated to change in order 'to survive' the dilemma of moving from a teacher-dominated to a student-focused approach. The particular dilemma prompted by Karen's multi-age classroom was how to cater for the learning needs of the individual student without relying upon grade based teaching and cohort referenced testing. For her, the notion of caring involved an over-protective need to control all aspects of the students' knowledge acquisition process, and therefore an important part of her transformation was to find out how she could be responsive to the individualised child while simultaneously retaining a caring ethos. Early in her first year at St Clares Karen expressed her fears at 'letting go' and allowing the students to work at their own rate in a developmentally appropriate way. However, she felt constrained by her own sense of efficacy, her personal biography, and her fear of sharing power:

Phil: What provides the biggest barrier to letting go?

Karen: My own socialisation into the teaching profession through teacher training. Parental perception of how the classroom works, particularly when they are present in the classroom. My faith in the autonomy and power that the children themselves are in control of (Interview 6-7-93).

As Karen sought to understand the supporting theory underpinning a caring student-centred approach and investigated and implemented alternative instructional practices to support it, changes began to appear within her beliefs and practices about the 'how' of teaching and learning. Strategies such as peer tutoring, learning centres and individual work contracts were introduced, as well as efforts to negotiate unit planning that was student - rather than teacher-based:

Phil: What changes in your beliefs and practices have you noticed since starting here?

Karen: Catering for the needs of the individuals is certainly a big shift for me. I think the structure forces a change in your thinking. You have to change to survive. I mean I had to change the way I taught, like allowing the children to work in groups. It was difficult to change the structures so that I did not take charge of what went on all the time (Interview 7-7-94).

However, unlike Tony, Karen continued to experience 'knots' in her thinking over the two years of this study because the dilemmas she experienced dominated her beliefs and practices. This confusion and anxiety were reflected through her sense of self as the vulnerable and confused neophyte teacher who felt little sense of ownership for the change

process (Borich, 1999; Rudduck, 1991). Although Karen made some significant transformation towards a learner-centred approach, she noted on several occasions that she was unable to gain control over the uncertainty and ambiguity presented by multi-age, and this in turn threatened to stall the process of change:

Karen: I know I am going through a change but I am finding it so hard to let go. I know I am expressing the theory of catering for individual needs but I know I am not really doing it. Now I am not sure if I should stay here next year and see this change through or should I move down to the Gold Coast. I am really confused (Conversation 26-8-94).

It appears that Karen understood that the prompt for change was predominantly generated by the ongoing dilemmas posed by the multi-age ethos of the school. Even though she sought inspiration through dialogue with her peers and any significant others to make sense of her unease and confusion, the conflict over her role in the 'what' of knowledge acquisition remained. As she comments:

Karen: I think there needs to be a change but I do not know how it is going to change. That is probably why I cannot understand what it is. I think there is so much I should be skilled in, so much that I should know and do, but I do not know what it is. You could not really sit and think this is what I want to change, because then you would be changing it... If someone showed you like it was an inspirational thing and you thought, "Hey! I would like to be able to do that or incorporate it." (Interview 11-11-94).

Jenny

Jenny found the multi-age philosophy strongly appealing as a grounding for her existing beliefs and practices and therefore she did not encounter any significant dilemmas. The compatibility between Jenny's professional orientation and the beliefs and practices favoured by the school was evident in her following comments when she was asked to outline the advantages of a multi-age classroom over a conventional classroom:

Jenny: Dynamics are vastly different. Communication between individuals is highlighted; learning to communicate—to really get the message across is different—as children have to adapt more often—older child to younger child who does not understand—the older child has to use different strategies and language to analyse the situation and rephrase ensuring the essence of communication task gets across.

Children who may need help in a task readily approach others.

Patience, tolerance, cooperation and actively taking charge of their learning is obvious.

Children are more natural as they are becoming who they are rather than the 'average' dictates.

Multi-age is not dictated by the syllabus that every child (who is average) should have by end of a given time.

Multi-age is where the individual learns 'what they don't know and need to know' over many 'graded syllabuses' during their primary years. I wish it could be in secondary as well (Written response 8-8-94).

Donna, Dave and Kathy

For the remaining teachers (Donna, Kathy and Dave) the transition to multi-age did not present them with dilemmas that compelled them to adopt unfamiliar practices, although

Donna found her initial experience of the school (four years prior to this study) a 'culture shock.' One particular challenge she faced in those four years was the need to modify her approach so that it was more consistent with a student-focused approach to teaching and learning

Donna: ...definitely multi-age had changed my views. You come out of college and you know you are told to use this book or this book for a particular year level. Well I refer to text books sometimes. It is what they need and where they are at and then I select suitable activities from that text book. One thing also I have found teaching in multi-age is that knowledge is not just text book knowledge. If you asked an outsider they would say of course the teacher has to teach from the text book, the teacher gives them knowledge. I was thinking on the weekend, no it is not like that. We are doing all these things in the class like prepared topics, research projects and the students are making things and sharing things with each other, now the children are learning from each other. That is so important and they create knowledge for themselves and others just by reading and sharing information (Interview 26-7-93).

As will be seen later, Donna was able to make the transition so that her beliefs and practices became consistent with those of the school, ensuring further challenges were more practical than philosophical. One particular challenge was the need to guarantee that her beliefs about assessment remained student-focused and thus avoided practices that inappropriately labelled and compared students.

Kathy, like Donna acknowledged that initially she felt daunted by the notion of multi-age, but early in her experience in the multi-age classroom she recognised that she could readily adopt its beliefs and practices:

Kathy: I must admit before I started I was really worried about getting thrown into a multi-age situation because of the challenge... then again I realised the kids know what's happening. Like the older ones, they know that if you are working with the little ones to go on with things. They ask each other a lot of things. After big lunch we have our reading time. A few of them teach the little ones to read which is really precious. I thought, you know, with the books they are pointing to words and teaching them things (Interview 26-2-93).

Although Kathy found the notion of having an interactive classroom challenging, particularly where the ebb and flow of movement could be distracting and difficult and required her to implement a behaviour management plan, she still acknowledged that it was consistent with her student-centered approach:

Kathy: Sometimes there's a problem with noise. Just coping with productive noise. Sometimes you feel like there's not enough 'on task' time because of the noise. However, look around and you discover children explaining, questioning, discovering, sharing and most of these things are confidence boosters too! (Written response 26-8-93).

Summary

It appears from the evidence available in this study that one prompt for change in beliefs and practices emerges from the dilemmas teachers experience as their professional orientations clash with the beliefs and practices espoused by the school. This clash of orientations raises questions about the permeability of individual beliefs and practices and whether changes are most likely to occur in a teacher's core beliefs or in beliefs and practices that are secondary. A related question is: if change occurs, does it alter the theme of the orientation?

5.3.2

Changes in Teachers' Orientations

It was noted in Chapter two when discussing the nature of belief systems that core beliefs are resistant to change and conversely those beliefs which are secondary are more susceptible to change (Pajares, 1992). The beliefs that were core for the teachers in this study focused on self, self-in-relationship and knowledge and were responsible for determining the theme of an orientation as well as influencing secondary beliefs.

The dilemma both Karen and Tony experienced was how to ensure their knowledge beliefs were compatible with the school's multi-age philosophy which emphasised the integrity and individual developmental levels of the students. The challenge took on added meaning for both because their knowledge beliefs, along with their beliefs about self and relationships, were central to their orientations. The changes that both undertook revealed how these core belief domains were highly influential in altering the thematic nature of their orientations. For Karen the theme of her orientation changed from 'caring with control' to 'caring with shared control' and for Tony from 'developing self to promote student growth' to 'developing self to promote independent learning.' The remaining teachers in this study, unlike Tony and Karen, did not experience any significant dilemmas during the period of this study and consequently their orientations were characterised more by constancy than by change.

Tony

Tony found that his initial experience of multi-age demanded restructuring of his beliefs about what knowledge was important for the individual student and his role as a significant other in creating a learning environment which facilitated construction of such knowledge:

Tony: ... now all of a sudden because there is no syllabus you are following, process has become important in multi-age.

Phil: Has this caused some turmoil for you?

Tony: Oh yes! Just the whole thing, you know, each child is an individual. It has taken me six months to get down to individual teaching. I started at the beginning of the year and basically I was still teaching a class and at the end of term one I got down to groups, like I was managing to teach groups. Next term I will start to try and teach individual needs, but that has taken me six months.

Jane: You have been learning about the students along the way; do you think they have been learning as well?

Tony: Oh yes they probably have. I can show you what they have learnt, but as I was saying, these processes and thing is only showing where I need to come in. I still haven't come to terms with that one yet (Group discussion. 18-6-93).

Initially Tony attempted to assimilate the new practices by grouping the students according to their content knowledge in the graded syllabus documents. However it was this distortion of the intended practices of multi-age, where the syllabus documents are understood to consist of concepts, principles and physical, social and thinking skills across several year levels, that alerted Tony to the anomalies within his belief system. First, he began to understand that the new information he was confronting about the value of graded content knowledge represented an anomaly, and second, this information needed to be reconciled with his existing belief about the centrality of the individual. Third, he also experienced a desire to reduce the inconsistencies among his beliefs (Pajares, 1992; Posner et al., 1982). As Tony accommodated the new knowledge beliefs, changes began to appear in his teaching and learning practices. He introduced several student-centred strategies such as learning centres, independent research projects and individual work

contracts. However his initial attempts with these approaches proved to be inadequate and, as he notes, he had 'a gutful,' indicating that there was some interplay between his beliefs and practices. However he persevered and achieved some success in reconciling his beliefs and practices with the multi-age ideal:

Tony: Yes well this year, after six months, if you had asked me in June, I would have said I have had a gutful of teaching, the whole bit and I was ready to go. Whereas now I am probably a bit more comfortable; at least I think I am happy with what I have done this term. Up to two weeks ago I thought I was a disaster. With this research project, for example, a lot of them were mucking around and wasting time. Now that they have got their display of what they have done and I have gone through the steps with them I think I am on target (Group discussion 6-8-93).

Despite some ongoing challenges about having 'to rein the students in' Tony found his new methods were effective in responding to the needs of the individual students and were consistent with the approach of the school:

Phil: Has working in multi-age changed the way you approach teaching?

Tony: Teaching is no longer something you 'do' but a process in which you are a catalyst. Letting children take responsibility for their own learning and decision making process takes away the traditional teacher/student relationship and replaces it with a more facilitator/learner type of situation (Written response 8-8-94).

And at the end of the two years of the study Tony noted how his beliefs about the 'how' and 'what' of knowledge were dominant:

Phil: What are the key elements of your belief system at the end of the two years?

Tony:

- *individualised instruction and more importantly evaluation*
- *cooperative planning with the students*
- *the ability to allow each child to succeed and not be branded a failure due to averages*
- *a more relaxed discipline*
- *taking responsibility for learning behaviour away from the teacher and placing it with the student*
- *watching the students being able to find their own knowledge and use it through more research and independent work (Written response 8-11-94)*

The new knowledge beliefs that Tony adopted appeared to have changed prior to changes in his secondary beliefs about teaching and learning (Pajares, 1992; Rokeach, 1968). This appears to be contrary to the model of conceptual change proposed by Fullan (1992) and Guskey (1986) in which changes in teacher belief follow rather than precede changes in teacher behaviour. Instead, Tony's experience is consistent with Johnson (1992) who found that some of the teachers in her study changed beliefs prior to changing their practice. The changes that took place in Tony's knowledge beliefs had implications for his beliefs and practices about teaching and learning. Even though his theme of 'making a difference' remained the dominating influence in Tony's orientation, his notion of how he could make a difference did change. Tony discovered that by redefining his knowledge beliefs he could individualise the curriculum in a way that was consistent with his notion of the individual and the multi-age ethos of the school.

Karen

Karen, like Tony, did not find the transition into multi-age a smooth one because her beliefs about caring, which involved the need to control all aspects of the knowledge acquisition process, were inconsistent with those espoused by the school. For her, caring required adherence to the graded syllabus because the syllabus constituted the knowledge to be learned and required a teacher-dominated approach to ensure effective transmission. Like Tony, Karen's knowledge beliefs functioned as the key to effective change about the 'how' and 'what' of learning. Her initial attempts to assimilate new practices resulted in a distortion of the multi-age ethos when she based her groupings on a composite model which classified students using grade or peer standards:

Karen: ...so we basically said, "O.K. what kind of levels have we got and will put the kids into those levels?" We decided that the first years were basically at the same stage; there was not anybody there we could move. Second years were a bit of trouble and we had to move around and maybe some third years. So now we have got four groups, like main groups.

Phil: So what criteria did you use to form these four groups?

Karen: Language, just what we have seen in writing. We kind of said just forget about the first years for the moment. The second years were kind of mixed up, so we had the lower working ones and those we thought were maybe a second year standard, which really does not exit, but just going up gradually (Interview 24-2-93).

Karen also found difficulty in 'letting go' of her teacher dominated approach as she attempted to introduce a learner-centred style which allowed the students some control over the process of inquiry and learning but not over the content of learning. Gradually she

acknowledged there were anomalies and that her existing beliefs and practices about teaching and learning needed to be replaced. As she observed:

Karen: This is the first time I have organised a process writing lesson in which I have not directed the first years with a topic. Up until now I have always nominated what and how they would be writing about. I am concerned. You know me, I really find it hard to let go. I like to be in total control (Conversation 26-5-93).

It became evident with Karen that changes began to appear in her practices first, followed by the beliefs that justified them. For example, as Karen implemented her new practices, which did not aspire towards control over learners but rather allowed them to play an important role in the teaching/learning process, she saw the positive influence this had on classroom dynamics:

Phil: How do you see the power base changing in the classroom?

Karen: It is kind of like contract learning. That is what I am talking about the practical side. We were saying when we were thinking about this and that we were seeing children taking power of their learning into their own hands and completing work and it is their responsibility. So it changes how you set work and how you expect them to finish it. It also shifts the responsibility, which is sometimes difficult (Interview 5-5-94).

The process of change in which a shift in Karen's practices was followed by change in beliefs is consistent with the model proposed by Fullan (1992) and Gusky (1986). This is a different dynamic to that experienced by Tony in which prior changes in his beliefs about the 'what' of knowledge and the 'how' of knowing resulted in change to his beliefs and

practices about teaching and learning. However, for Karen, the change from a teacher-directed to student-focused approach was not continuous but rather was long and conflicted because she sought viable practices which would enable her to adopt the implications of an individualised curriculum. For this to happen fully, changes in her knowledge beliefs about what should be learnt, and how it should be learnt would have been required. Such changes clearly did not happen. As Karen notes at the end of the second year:

Karen: I know I am going through a change but I am finding it hard to let go. I know I am expressing the theory of catering for individual needs but I know I am not really doing it. Now I am not sure if I should stay here next year and see this change through or should I move down to the Gold Coast. I am really confused. I wish someone could tell me how to let go (Conversation 26-8-94).

This non-linear approach to change was evident as she continued to distort the 'ideal' multi-age practice. For example she varied between a student-referenced and a cohort-referenced emphasis with assessment. She also acknowledged at the end of the two years of this study that she had difficulty in relinquishing control over what the students learnt and with whom:

Karen: Some days I still want to know what everyone is doing and I want everybody to be doing the same too. I expect there to be outcomes, physical outcomes. I know some teachers don't think that way, but for me and to be accountable to parents, like why they are at school, I think they have got to have done something (Interview 11-11-94).

For Tony and Karen the process of change involved negotiating persistent dissonance and disequilibrium prompted by a clash between their core beliefs and those of the school.

Dave, Donna and Kathy confronted few dilemmas of this kind and focused on improving aspects of their practice through thoughtful reflection and therefore their change process was assimilative rather than accommodative. For Jenny it involved an ongoing reflective dialogue as she sought to improve her practice and strengthen her thinking to ensure there was congruence within and between her beliefs and practices.

Jenny

Jenny found the multi-age approach of the school was consistent with her own beliefs about teaching, learning and social relations and therefore she was able to assimilate the new information without distorting the intended practices favoured by the school. The reasons will be addressed in the following section. As has already been noted, her professional orientation contained elements of both a constructivist and a socially critical perspective and her challenge was to confirm and reconfirm her beliefs. The results of this process are reflected in her comments about the multi-age classroom:

Phil: What beliefs characterise your multi-age classroom?

Jenny:

- *relationships between others*
 - *understanding/tolerance/accepting individuality*
 - *belonging—with this comes responsibility for learning about change and adapting to it*
 - *sharing gift of self*
 - *confidence in self, accepting strengths and weakness*
 - *learning through watching and doing in a nurturing environment*
- (Written response 16-5-93).*

Jenny's beliefs and practices about the classroom as a just, caring and interactive learning community, where knowledge could be constructed and reconstructed, remained

consistent during the period of this study and consequently there was no evidence that she had to accommodate her orientation to unfamiliar beliefs and practices. Indeed, she found her multi-age classroom a place in which she could enrich her beliefs, unlike Tony and Karen who found that they had to accommodate to new and perplexing information with consequent effects on their orientation.

Kathy

Kathy acknowledged that initially, as a neophyte teacher, she felt daunted by the notion of working within a multi-age classroom because she was unaware of how it operated. However, early in her experience in the school she recognised that she could readily adopt the school's beliefs and practices even though it was difficult at times:

Kathy: Sometimes there's a problem with noise. Just coping with productive noise. Sometimes you feel like there's not enough 'on task' time because of the noise. However, look around and you discover children explaining, questioning, discovering, sharing and most of these things are confidence boosters too! (Written response 26-8-93).

Kathy found within her first three weeks at the school that her planning of thematic units was dominated by covering graded syllabus content knowledge, which like Tony and Karen, could have been a significant barrier to the successful implementation of the multi-age philosophy:

Kathy: When I went up to the library I was really hung up on the syllabus documents. Like I had all the social studies, science and language documents but I really didn't know what I was going to do. It was a bit of a mess really. Then Steph (teacher-librarian) said that because I was fresh from Uni I seemed really hung up on the content

in the syllabus, which I suppose I was. She then suggested that I do a language based unit and that why not try nursery rhymes (Interview 20-2-93).

However, as her following comments note, she was able to utilise the syllabus documents to engage students in the use of higher order thinking skills and to plan activities that were student-focused, such as learning centres:

Phil: How did the planning and implementation go for your nursery rhyme unit?

Kathy: ..I found the higher order thinking skills down the side most useful. I really have to concentrate on those. The most useful part other than the thinking skills is getting all the learning centres planned. Now that is really good. You can see I have put a lot of them up and the children have started on them (Conversation 11-3-93).

Over the two years of this study it became increasingly clear that Kathy rapidly made the transition to a multi-age school without having to distort its practices, including using the syllabus document to respond to the individual learning needs of the students:

Phil: What do you think are the cognitive and affective benefits of multi-age?

Kathy: It's easier for you to let the children progress with their work, especially written tasks. The working atmosphere of the classroom, the discussions, even questions get the minds thinking and stir up the search for knowledge. The working classroom is a cognitive benefit in itself. The younger members of the class hopefully see the benefits and learn knowledge and how to be co-operative, how to

communicate with their peers to get help, ideas and therefore everyone benefits by the positive outcomes (Written response 5-10-93)

Donna

Donna similarly experienced early fears about the demands that a multi-age philosophy might place on her belief system when she entered the school four years prior to this study. She acknowledged that she had to accommodate to an unfamiliar practice by surrendering her 'talk and chalk' approach for one which was student-centred:

Phil: What was it that you found most confusing when you first experienced a multi-age school?

Donna: Just the mass of ability groups. There was no training to handle this... I suppose it was just knowing how to let go of what I had experienced, especially coming straight from a text book approach. It was just a fear thing too, a fear they are not going to learn unless you have your sums written on the board and their exercise books in front of them and the 'you do as I say' approach. It was a real culture shock (Interview 25-11-94).

Donna indicated that these adjustments and elaborations occurred relatively quickly despite the accommodations she had to make in the process:

Phil: Do you think there are aspects of your practice that you have changed since you have been here?

Donna: Like I have said, it is a quick learning experience coming straight from college to a multi-age school. It was hard, but it was an

advantage for me because I think a traditional teacher who has been teaching for twenty years might find it a lot harder.

Phil: Why do you think that?

Donna: I think they would be locked into something whereas I was not.

Phil: Do you mean that they might have set beliefs about teaching and learning?

Donna: That is right and I was not I think. Really this is the only way I have known (Interview 14-4-93).

It became clear during the two years of this study that Donna had made a relatively smooth transition to multi-age, despite some challenges to her knowledge beliefs four year prior to this study, and was then able to assimilate the school's expanding beliefs and practices:

Donna: My focus on what things are important has really developed. I don't have any nagging feelings that for example children A, B, C, are grade three children and they haven't grasped multiplication yet! I don't have these feelings in the back of my mind or thoughts of "I haven't taught enough because they don't know this yet!" I find multi-age wonderful in that you have the same group of children for a couple of years and at the start of the next year you can start off where they are at, regardless of the year level, and you know them too. You can treat them as individuals rather than a number in a box (Written response 8-10-94).

It is clear that the multi-age philosophy challenged the teachers in various ways and that their centrally defining beliefs were critical in determining the nature and pace of the change which took place in their beliefs and practices. However, it was evident also, that the challenge for change was not only prompted by the dilemmas of multi-age but also by the desire to improve at least in two of the teachers. This observation raises questions about the nature of self-induced change and how it was influenced by the thematic characteristics of individual orientations.

5.4 CHANGE AND THE THEMATIC CHARACTERISTICS OF TEACHERS' ORIENTATIONS

5.4.1 The Locus of Control in the Process of Change

The third question investigates the locus of control when a teacher is confronted with dilemmas, and asks:

Which aspects of change arose from the teachers' desire to improve?

Both Jenny and Tony highlighted the importance of internally generated reflection on their core beliefs as essential for improvement, although this change belief appeared to be more centrally defining with Jenny than with Tony. The thematic significance of an internally generated approach to change had implications for how they approached the dilemmas they experienced and consequently for the way they positioned themselves in the process of change.

Jenny

Jenny's story revealed that she did not experience any dilemmas generated by the multi-age philosophy of the school but found relationships a challenge because of her personal biography. As she comments:

Jenny: Being locked into having syllabus and curriculum and all that sort of rubbish did not provide any major dilemmas for me. My main fear is anything to do with relationships... my background with relationships was my major setback and that was my major trouble.

Phil: That is interesting as the major problem teachers have coming into the system seems to be with the syllabus, curriculum and structures.

Jenny: Yes you have also got to see what background they have brought in. I suppose if you have been torn through relationships in your personal life as I have, then nothing is more valuable than relationships in real life. When you think, in life nothing is more richer than a good relationship (Interview 18-9-93).

It was not only the significance of self and self-in-relationships, reflected through her image of 'humanness,' which was a defining characteristic of Jenny's orientation, but also her approach to change which valued both quiet inner reflection and peer dialogue:

Phil: How do you attempt to resolve challenges and dilemmas you have?

Jenny: Acceptance of who you are—warts and all—leads readily to accept others. Reflection on this then enables you to share yourself with others and the dilemmas you have (Written response 8-8-94).

It was Jenny's self-defining belief, linked with her change beliefs, that dominated her self-improvement agenda and allowed her to make sense of the multi-age classroom, which she understood as being a relational environment where individuals could construct and

reconstruct knowledge. The importance of this approach for Jenny was sharpened through a critical incident prior to coming to St Clares when she had to negotiate the dilemma prompted by having a student with Downs Syndrome. It was at this time that Jenny became aware of the gap between her espoused belief about catering for the needs of the individual and the realities of her practice at that time:

Jenny: I had been catering for the individual but it was academic, rather than catering for the whole child and really accepting that kid for what they were, not for what I was wanting them to become... I had to change my beliefs not her. We are the ones that have to change our attitudes to what we see as normal... it sort of knocks you when you have to reassess everything you are doing and change the way you are doing things in the classroom (Interview 23-3-93).

Jenny's description of this episode highlights how she understood change as being internally generated and that shifts in beliefs require a change in practice. As her following comments suggest, a reflexive approach to the normative criteria she used to define the individual resulted in changes to her knowledge beliefs, which in turn required a change in her classroom practice (Johnson, 1992; 1994). It was her thematically defining beliefs which enabled her to identify the dilemma she was confronting and then to make the appropriate change in her errant beliefs prior to changes in practice, thereby tightening the congruencies within and between her beliefs and practices:

Jenny: She turned me inwards, she made me look at myself, to see what is my role here, what do I want out of life through the career I have chosen and I thank her for making me keep my eyes open. She had knowledge, different knowledge, and her knowledge was just as authentic as mine and her needs were completely different to what my needs and what I thought what her needs were (Interview 23-3-93).

It was Jenny's image of self which was implicated in how she perceived the possibilities for both resolving challenges and enhancing relationships (Lampert, 1985; Tickle, 1999) and this image enabled her to operate within the multi-age classroom by continually improving her practice. For her this ongoing desire to improve meant reflecting on the way she related with the students:

Phil: You mentioned the other day how you reflected on relationships at the end of the day.

Jenny: Yes that is what I am saying a lot of. I suppose with this term reflective practice, I am not happy with that term, because it is basically you are working from a role.

Phil: A practitioner?

Jenny: Yes and when you are looking at reflective practice you are reflecting on the practice of what? So therefore from my point of view, I don't want to be in that role of a practitioner. I would rather see it as reflecting on myself, reflecting on bridges I have still got to build in the class, with individuals... where I have got to deviate from, where I have got to go to. Rather than being a practice of how to set up the classroom or how to set up a group... that is practice. If you are not in a role when you walk into the classroom, then you are not looking at your practice, your are looking at yourself (Interview 14-6-93).

Tony

Tony, like Jenny, although in a different context, encountered dilemmas when he attempted to use inappropriate categories to respond to the learning needs of the individual. As has been noted earlier, his initial response to change was the need to survive. However rather than simply adopting a reactive approach to change, Tony's central beliefs about self-in-relationships also placed the locus of control internally:

Tony: The most significant change agent is the inner drive to be the best teacher you can be. Multi-age gives the opportunity to more fully satisfy that drive and to 'make a difference' to each and every child. To help them reach their full potential. To let them 'be someone' (Written response. 8-8-94).

It was an inner dialogue where the perception of self or the 'person I want to be' became an important prompt and mediator for Tony in deciding how to respond to the challenges he confronted. This desire to improve may have assisted Tony, as it did with Jenny, in changing his knowledge beliefs before he made changes to related practices.

Summary

It has been found so far that the notion of orientation is an appropriate characterisation to describe the interrelated beliefs and practices of the teachers. Rather than being a loose confederation of professional practices, each teacher's orientation was unique and was dominated by a recognisable 'theme' which embodied both 'core and peripheral' beliefs. However, even though each person's orientation was idiosyncratic, it is possible that the literature on teachers' orientations could be used to illuminate the individual orientations and therefore assist in drawing conclusions from this study.

5.5 COMPARISON WITH LITERATURE-BASED ORIENTATIONS

Initially I used previously reported orientations (Samuelowicz & Bain, 1992; Pratt, 1992; Fox, 1983; Kemmis, Cole, & Suggett, 1983) as possible templates for understanding the personal characteristics of individual teachers' orientations and as a framework for comparing and contrasting their approaches to multi-age. However, although these models offered some valuable insights into the beliefs and practices of the teachers, they did not reveal the interconnections evident within each teacher's orientation. This became particularly evident with Jenny and consequently I found it necessary to adopt a piecemeal mapping between teachers and the literature because no reported orientation was sufficiently close to hers in which the relational, change and knowledge domains were collectively considered.

Jenny's Orientation

A defining feature of Jenny's beliefs could be captured through her image of 'humanness.' This image included a strong sense of her self, how she related with others, and how she resolved any dissonance that emerged between her beliefs. The significance of relationships was reflected in her emphasis on creating a collaborative and interactive learning environment in which there was a high level of learner activity where knowledge content could be adapted to suit individual students.

Although images of the self and self in relationships have been noted in the work of others (Nias, 1987; Lipka & Brinthaupt, 1999), the thematic significance of such a belief in shaping teachers' orientations has not been emphasised in the literature. On the other hand the thematic importance of interpersonal relations in determining the characteristics of an orientation *have* been explored by others (Pratt, 1992; Kemmis, Cole, & Suggett, 1983; Fox, 1984) and these proposals provided a possible framework for further interpretation of Jenny's orientation.

A common theme that Jenny shares with Pratt's (1992) nurturing and developmental conceptions, Kemmis et al.'s (1983) liberal progressive orientation and Fox's (1984) *growing* theory is the relationship of teacher to student based on an ethical stance derived from a sense of caring and concern for the worth and dignity of the individual. Typical of those orientations, and of Jenny, was an emphasis on developing a co-operative environment wherein learning results from active knowledge construction, individual and collaborative..

As was evident from her practice, Jenny valued her role as a facilitator and co-learner, with her task being to create a developmentally appropriate and collaborative learning environment in which the students could construct and reconstruct their own knowledge. Kemmis et al. (1984) note that such an interrelated approach to teaching, learning and social relations typically emerges from a constructivist-interactionist model in which learners are engaged in activities which challenge them to construct new understandings and insights. As was the case with Jenny, Kemmis et al. also claimed that such an orientation aims at individualising the teaching-learning process, resulting in heterogeneous groupings and informal classroom organisation. Pratt (1992) similarly found in his nurturing and developmental conceptions that teachers emphasised negotiation with students about what was to be learnt and with whom, and how to evaluate goals and outcomes. Fox's (1984) developed theories also were reflected in Jenny's emphasis on what happened to the student as a person and her recognition that students make significant contributions not only to the process and pace of their learning but also to the direction and objectives of the learning task. This approach to teaching and learning was also thematically connected by Fox (1984) with how knowledge is constructed and reconstructed.

The interrelated beliefs that constituted Jenny's orientation broadly resembled those postulated in constructivist philosophy and practice (Prawat, 1992; von Glasersfeld, 1996). However, as has been highlighted by von Glasersfeld (1996), there are competing views within constructivism as to how to accommodate the complementarity between the individual construction of knowledge and knowledge which is socially situated and created.

Jenny valued a socially interactive approach which emphasised the collaborative experience of the group, so that individuals could articulate learnings and relate them to what they learn indirectly. Jenny's perspective thus enabled her and the students to become critical and constructive co-participants in the life and work of society. This approach is similar to that proposed by Kemmis et al. (1983) in their socially critical orientation and extends the notion of private or subjective knowledge outlined in their liberal-progressive orientation and Pratt's (1992) nurturing orientation. There also are elements of Pratt's (1992) developmental conception represented in the way Jenny understood knowledge. For Pratt changing understanding and thinking meant inducing a certain amount of cognitive dissonance within the present way of knowing. The image Pratt used to describe the teacher's role in this conception, and one shared by Jenny, was that of a traveller and inquirer on an intellectual journey in which there is the intention to provide a learning environment that will help individuals both create the dissonance and also make meaning from it.

Even though there were similarities between the themes evident in Jenny's orientation and those just described, there also were interconnections between Jenny's beliefs that were not apparent within those models. As was highlighted earlier, Jenny's reflexive belief was an important aspect of her orientation and assisted her in maintaining coherence within her belief system.

A central focus of Jenny's beliefs about change and her role in the process of self-improvement was the importance of linking the intrapersonal and interpersonal through reflection, both individually and through peer dialogue, so that she could frame and reframe the dilemmas she encountered. For Jenny, reflection was not a discrete activity but was integral to how she made sense of being in the world and understood her own existence in relationship with others. This approach to reflection placed the locus of control internally and allowed her to accommodate to beliefs and practices that led to changes within her orientation prior to this study in another educational context. The importance of change beliefs as a dimension of a teacher's belief system has not been thoroughly addressed in

the literature, and has tended to be viewed as a distinct activity or orientation (Wellington, 1996). Nevertheless, there are insights to be gained from the literature, even though it is not consistent with the notion of orientation as understood in the context of this study.

Wellington's (1996) liberating orientation to reflection (dialectic and transpersonal) captures some of the essential elements of Jenny's approach to reflection. His transpersonal orientation, which identifies the importance of being inner-directed, the need to focus on the relationship of internal to external, and to question personal responsibility to self and others, was essential to how Jenny understood relationships. Wellington noted that people who operate from this liberating perspective promote and value the personal and holistic development of self and others, often in a context that extends beyond the existing educational establishment. Jenny stressed on several occasions the importance of approaching life and individuals in an integrated and holistic manner, and that reflection was essential in ensuring this took place.

Jenny also incorporated elements of Wellington's dialectic orientation as she grappled with ways to create justice and equity in both educational and political arenas and challenged the ways institutions replicate the status quo. As was evident from her experience with the Downs Syndrome student, Jenny not only questioned herself as a person but also reflected on the problematic nature of power in shaping relationships and determining what constituted important knowledge. Jenny saw education and society as being interrelated and coextensive rather than as distinct identities. This was evident through her recognition of and reflection on the fundamentally political character of schooling, such as the relationship between disability on the one hand and access to school knowledge and school achievement on the other, and the influence of external interests on the process of teachers' work and curriculum development. However, Wellington argues, contrary to Jenny's experience, that the dialectic and transpersonal approaches are mutually exclusive; that is it is impossible for teachers to operate from both. Similar claims about reflection have also been made by Valli (1990), for example, who noted that a relational caring approach to reflection conflicts with a socially critical perspective because each

addresses similar issues with different purposes, problematic objects and evaluative criteria. For a critically oriented teacher, she claims, caring would be impossible apart from a political struggle to change oppressive structures that harm individuals who are already disadvantaged by society. But to the contrary, it was apparent from Jenny's beliefs and practice that she was able to bridge between both approaches by giving primacy to the students' affective growth through a classroom environment that was caring, interactive and cooperative, while also challenging the educational structures and processes which unfairly label students through meritocracy and thereby determine who will be successful.

Jenny's orientation was a coherent set of beliefs that framed her practice and allowed her to identify with the multi-age philosophy of the school. However her perspective could not be easily aligned within any published orientations, even though it could be illuminated by them.

Karen's Orientation

Karen's orientation, like Jenny's, was determined by her self-definition and how she related to others and the need to care for the well being and individuality of the students. Unlike Jenny, she initially expressed an overprotective need to control all aspects of the teaching and learning process so that the students could learn effectively and acquire knowledge in an ordered and structured environment.

Karen's sense of caring was similar to those described in the transmissive orientations, such as the Kemmis et al., (1983) vocational/ neo-classical, Pratt's (1992) engineering conception and Fox's (1983) simple theories. The interconnected beliefs in these orientations value the teacher as an authority figure who uses directive pedagogy to transfer knowledge from one who knows to those who do not. As Pratt (1992) notes, the dominant theme is teacher-centred with an emphasis on the transmission of information in a systematically controlled learning environment so that learning occurs in observable and predictable ways. Kemmis et al. (1983) described the dominant theme of a transmissive

orientation as one in which diligent and obedient students are developed and where the teacher has the role of structuring and sequencing what is known to allow the students to achieve mastery. This approach was partly evident in Karen's initial dilemma of how to organise the students into age-linked curricula activities determined by cohort referenced testing. It was also evident in her self-defining image of the vulnerable neophyte teacher who needed to demonstrate the power and authority she held over the students and her responsibility to those external to the classroom.

What Karen encountered in the multi-age setting was the need to answer vexing questions about how to break with an approach in which classroom management and control took precedence over the need to forge meaningful personal relationships with students so she could respond to their individual needs. Indeed Karen saw this change as essential in order 'to survive' within the multi-age classroom. Karen's change beliefs, unlike Jenny's, initially appeared to place the locus of control externally because she was driven by the need to seek inspiration for how to operate more efficiently within a multi-age setting. For Karen this involved an emphasis on the technical aspects of structuring the learning environment so that she had control over the process of inquiry and learning as well as over with whom and when the students discussed their understanding. As Karen noted, she was comfortable with this approach to change as she had seen no reason prior to her multi-age experience to reflect on issues other than those dealing with classroom control and management. However it became apparent that as Karen reflected on issues of a technical nature with her self and peers, she also began to focus inwardly on her own self and to question her relational and knowledge beliefs and the implications these had for her teaching and learning. This shift towards an approach to reflection in which she began to explore her own beliefs and practices and to investigate alternative strategies that were student oriented and contextually sensitive is similar to the deliberative and developmentalist modes described by others (Bullough, 1987; Tabanich & Zeichner, 1991). These approaches to reflection align well with a constructivist theory as they focus not only on the student's needs, interests and abilities but also probe personal beliefs and origins of ideas and actions (Zeichner & Liston, 1987).

As Karen responded to the prompts for change a shift appeared in her approach to teaching and learning so that it resembled the nurturing orientations described by others (Pratt, 1992; Kemmis et al., 1983; Fox, 1983). Within these orientations a sense of caring is expressed by developing a nurturing, cooperative learning environment in which the students are recognised as active constructors of knowledge through experiences and opportunities to discover and enquire. For Karen there was the realisation that 'caring' involved the need to change from an over-protective, teacher-dominated approach to one which was student-centred and allowed them to take responsibility for the process of inquiry and learning.

However Karen did not find the shift to a student-centred approach a particularly easy one. Although it was apparent her orientation began to resemble those grounded in constructivist philosophy there were still hints of a transmissive approach at the conclusion of this study. This was evident in her equivocation over assessment even though she shifted substantially towards student-referenced assessment which retained aspects of cohort and grade-referencing. She also continued to express concern about relinquishing control over the learning context and process and remained anxious and confused about which aspects of her belief and practice to change so as to ensure her practice was consistent with the multi-age approach of the school.

Tony's Orientation

Early in the research period Tony's beliefs and classroom practice were in some discord. Although he wanted 'to make a difference' by nurturing a caring environment in which individual students could flourish, he also found it difficult to relinquish the age-graded curriculum. This was manifested through his reliance on the content knowledge contained in the syllabus documents and his part in transmitting and testing it. Nevertheless, because he valued an approach to change which focused on self-improvement and on enhancement of his relationships with students, he began to negotiate his dilemmas. In

short, his beliefs about the important foci of the process of change and the nature of relationships became mutually informing.

This view of change is similar to the deliberative and developmental models (Valli, 1990; Zeichner & Liston, 1987; Wellington, 1996) as there is an emphasis on the discovery, assignment and assessment of personal meaning within particular educational contexts. The target of reflection within this approach is not only the professional self, but also the personal and emotional self.

Wellington (1996) notes, in relation to his deliberative orientation, that this form of reflection not only considers fundamental notions of meaning and how to deepen communication with students so as to enhance meaningful learning, but also often brings previously tacit assumptions and ways of doing things into awareness. As was evident with Jenny, Tony also exhibited some aspects of Wellington's transpersonal orientation by focusing on the relationship of internal to external and contemplating questions about how to integrate personal growth with his vocation and how to clarify his personal responsibility to himself and others.

As Tony began to question his established beliefs and practices about teaching, learning and knowledge it became evident to him that these beliefs reflected a transmissive and reproductive approach in which teaching is direct and sequential, learning is receptive and knowledge reproduction is rewarded. Tony recognised that such an approach was antithetical both to the multi-age philosophy of the school and to his own espoused beliefs about catering for the diverse needs of the individual student. Kemmis et al. (1983) for example, note that the teacher in the vocational/neo-classical orientation adopts an authority role transmitting knowledge and structuring and sequencing what is known to allow the students to achieve mastery, which can then be reproduced in a testing situation. Similar descriptions have been made by Pratt (1992) in his engineering conception, Fox (1983) in his shaping theories and Samuelowicz and Bain's (1992; 2001) transmitting knowledge conception.

Tony's shift from a teacher-dominated approach to one which was student-centred became evident as he progressively yielded control by seeking and valuing students' points of view and formulating classroom activities based on their needs, interests and prior knowledge. His self-defining image, as a facilitator who organised learning opportunities so that students could become autonomous and independent learners, reflected the shift he was making towards those relational and nurturing orientations described earlier. Within the Kemmis et al liberal/progressive orientation, for example, there is an emphasis on knowledge construction, not reproduction. As Tony began to question the nature of pre-packaged graded syllabus knowledge, there was a growing awareness of the social construction of knowledge which involved a pedagogical emphasis on discussion, negotiation and collaboration. He began to recognise the importance of higher order thinking skills and cognitive conflict in facilitating the process of knowledge acquisition. His attempts to follow a 'thematic' approach to syllabus content signified the change he was making towards a more complex understanding of knowledge which was conceptually interrelated and interdisciplinary. Another significant change for Tony in which he responded to the needs of the individual, was a shift from formalised grade-based testing to child-referenced improvement. Within this approach to assessment he began to investigate ways of utilising both the processes used by the students and the product of their learning as an opportunity for insights into the student's previous knowledge constructions. Kemmis et al note that, when the teacher begins to look for evidence of individual growth and to use descriptive and informal means of assessment, it is an indication that there is a move from the transmissive approach to one consistent with their liberal/ progressive orientation.

At the end of his first two years in multi-age Tony had made some changes in his perspective. His beliefs about knowledge, particularly those dealing with the age-based curriculum, assessment and the process of knowledge acquisition had made a significant move from a transmissive approach to a constructivist perspective. This change had implications for the nature of his orientation.

Kathy, Dave and Donna's Orientations

The three remaining teachers in this study (Donna, Dave and Kathy), unlike Tony and Karen, did not undergo any significant systemic dissonance and consequently their orientations maintained thematic coherence over the period of this study. The pattern evident in all three cases valued a caring and nurturing learning environment that was student responsive and was analogous to the constructivist based orientations described earlier. Even though there were thematic similarities between the three teachers' orientations, they remained distinctive, reflected in the individual defining images, and were enacted in distinctive ways within the multi-age classroom.

Donna used the image of a 'mother' and her class as a 'family' to describe her sense of self and how she related in the classroom. Her practice was consistent with this image because she often referred to the need for a relational environment that was not necessarily permissive but which valued friendship, caring, emotional support and personal relationships. By so doing she was able to create a cooperative learning environment in which she could sort and appreciate students' points of view, formulate classroom lessons and differentiate activities on the basis of their needs and interests.

Kathy on the other hand used the image of a 'gardener' to describe her notion of relationships within the classroom. Fox (1983) used a similar horticultural image to describe his growing theories, which acknowledge and respect the individuality of each student. Fox notes, as did Kathy, that the gardener does not work towards a precisely defined end, since the garden is continually changing as different plants emerge and develop, and therefore flexibility with the growing process is required. Kathy also employed the image of a 'key' to explain how she understood her role in the process of knowledge acquisition. This image is also consistent with her orientation because it recognises the role of a significant other in opening up and guiding students to interpret and make sense of new ideas. Similarly, her beliefs about assessment reflected the emphasis she placed

on learning with understanding and the need to demonstrate growth in understanding in appropriate tasks.

Dave invoked the image of a 'father' and a 'protector' to convey his notion of relationships and therefore saw his multi-age classroom as a place where the students could gain a sense of self-affirmation and acceptance. He aimed to develop an environment in which individual students could be supported to develop at their own pace, building on what they already knew and were interested in, and this approach was often calibrated to the key learning areas in the syllabus documents.

Even though the three teachers did not experience any significant dilemmas from working within multi-age they did experience some challenges that required them to reflect on their practice but generally not in a way that challenged their beliefs. Their approach to the content and process of change focused on the effect their choices had on particular students and the need to develop a caring community and were similar to the deliberative approaches described earlier (Clift, Houston, & Pugach, 1990; Wellington, 1996). All three teachers noted how they responded to the external prompts by engaging in peer dialogue and self-reflection.

Any challenges that Donna confronted, for example, emerged from a practical rather than a philosophical base as she struggled to make her beliefs and practice workable in the multi-age setting. A practical problem for her was how to counteract the negative impact of comparing students with each other, because she valued an interactive learning environment based on student self-referencing rather than one which was cohort-referenced.

Dave found that multi-age confronted him with the task of ensuring he responded to the needs of the individual students so that his practice was consistent with his beliefs about teaching, learning and relationships. For example he ensured that he adopted a student-referencing, rather than cohort-referencing approach to assessment and investigated ways

to group students within key learning areas according to where they were up to in the syllabus.

Kathy similarly reflected on ways to confirm her belief in the importance of creating a relational environment in which the students could learn with understanding and then demonstrate this growth in understanding in appropriate ways. An important tool to aid the process of improvement for Kathy, was the use of a journal which she found useful in making meaning of the challenges she encountered in the classroom.

5.6

CONCLUSION

This chapter has investigated the consequences of the interplay between the multi-age setting of the school and the beliefs and practices of individual teachers. It has been found that the notion of orientation is an appropriate characterisation to describe the interrelated beliefs and practices of the teachers. The nature of the orientations, as defined by the core beliefs, was instrumental in determining how each teacher negotiated the challenges presented by the multi-age philosophy of the school, particularly when changes were required to some beliefs. It was found that each teacher's core beliefs embodied beliefs about self, self-in-relationships and knowledge and that it was the knowledge beliefs in particular that appeared to be the key to effective change. This was so with both Karen and Tony where their ability to enact an individualised curriculum was either constrained or enhanced by their beliefs about the appropriate sources and timing of knowledge. It appeared also that the source of motivation for change, whether located internally or externally was significant in how each teacher managed the demands of the school context. What also emerged from the teachers' stories is that each person's orientation was idiosyncratic and although there were similarities with models proposed in the literature, there was no extant orientation that could be used to describe and categorise any one teacher.

The next chapter will outline the conclusions of this study and the implications for further research.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH

6.1 BACKGROUND TO THE RESEARCH

The purpose of the research documented in this thesis is to investigate the interplay between beliefs and practices over a two year period in a school context that was likely to provide challenges and opportunities for professional growth. The research is centered upon the experiences of six teachers at St Clares, as they negotiated the challenges and possibilities presented by the multi-age context of the school.

The motivation for this study was prompted originally by my interest in determining why individual teachers adopted a unique and distinctive teaching disposition within the multi-age approach preferred by the school. It became evident to me, as the school's administrator, that the philosophy—which espoused the practice of teaching children of different ages and ability levels in the one classroom, without dividing them or the curriculum into steps labelled by 'grade' designations—either enhanced or hindered the way teachers operated. The research questions therefore emerged from the need to understand why this was so:

- Question 1 Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientations?
- Question 2 How does the multi-age environment influence teachers' beliefs and practices?
- Question 3 What are the implications for professional in-service and for the evaluation of complex curriculum initiatives like multi-age primary schooling?

Initially I considered using the construct of teacher knowledge to understand why the teachers of my school adopted different practices. Although I found the notion of teacher knowledge useful, it did not seem to be well suited to the task of capturing the idiosyncratic nature of the teachers and their practices. It's not that the literature on teachers' knowledge (eg., Eraut, 1985; Donmoyer, 1996) is irrelevant to an understanding of teachers' professional practices, but rather that it has tended not to incorporate the themes or frames that provide coherence to an individual's practice. What appears to have been missing from rich description of teachers' knowledges is a sense of why some knowledge is present or emphasised and other knowledge is not.

A review of the literature on formal and practical knowledge (eg., Russel & Munby, 1991; Bereiter & Scardamalia, 1992) highlighted the fact that teaching is based largely on practical knowledge, which often remains tacit, and is built during on-the-job teaching and generally does not involve the conversion of formal knowledge into a practical form. It was at this stage of the study that I also found the concepts of reflection-in-action and reflection-on-action unhelpful because there is not much time for systematic thought or contemplation in the classroom, yet teachers continue with teaching using their practical knowledge. It was evident from the literature (eg., Kagan, 1992; Leinhardt, 1990; Tillema, 1995) that teaching is highly interactive and contextualised, yet what teachers do is not determined or driven by context alone but appears to be personally themed (Pajares, 1992). I concluded that teaching expertise might be better thought of as a set of dispositions to know, perceive and act, and that the structure observed in expert practice is the result of these dispositions being directed towards specific purposes in specific contexts in keeping with teachers' beliefs and belief systems (Pajares, 1992).

The analysis in chapter five suggests that the concept of belief systems (orientations) provides a suitable framework for understanding the personal and idiosyncratic nature of a teacher's beliefs and practices. The evidence presented also suggested how these orientations can change when they come into conflict with school ethos and practice. It

was this framework which provided a suitable platform from which to answer the research questions.

6.2 DESIGN OF THE RESEARCH

No single research method was considered adequate because of the complex nature of the beliefs and contexts involved. Accordingly, the case study method was grounded in an interpretative approach which sought to align key aspects of the individual cases in a descriptive framework centred on teachers' beliefs and practices. Data were obtained through interviews, observations and written responses, and were used to compile individual case stories for each of the six participating teachers. The stories are located in the appendix of this study. These stories were written so as to reveal the perspectives and practices of each teacher, but with the comparative framework in mind. The discussion that follows is based upon the comparisons provided by that framework and draws in particular upon the belief orientations (and practices) described by that framework (see orientation maps associated with the description of each teacher in chapter five).

6.3 ANSWERS TO RESEARCH QUESTIONS

The first research question asked:

Question One: Do the beliefs and practices of individual teachers comprise a loose confederation of professional practices or a coherent professional orientation?

The importance of regarding teachers' beliefs as interconnected and thematic rather than discrete elements acting in isolation is one conclusion to be drawn from this study. This finding supports other research which has employed orientations to understand how teachers' beliefs are interconnected and influence their practice (Kemmis et al. 1983; Samuelowicz & Bain, 1992), particularly those schemes which highlight the thematic

nature of orientations (eg., Pratt, 1992; Fox, 1983; Samuelowicz & Bain, 2001). Nevertheless, despite the possibilities these models offer for illuminating teachers' beliefs and practices, they do not fully capture the personal nature of the teachers' orientations because they have not adequately addressed two important issues: first, whether the thematically central belief position of an orientation is like a 'core' belief and second, whether and how orientations accommodate to or, on the contrary, assimilate the contextual pressures with which they conflict. It was these two relatively unexplored questions that offered the potential for understanding both the personally 'themed' nature of teachers' orientations and the process of change that takes place within a belief system when dilemmas are confronted.

It was clear from the teachers' stories analysed in chapter five that their orientations are coherent, that is all professionally relevant beliefs are systematically interconnected. It was noted that some beliefs are thematically central and influence other beliefs whilst others are not inherently thematic but are influenced in thematically derived ways. Put another way, the pattern of belief positions made sense because of core/primary beliefs which thematically defined the nature of the orientation. It was evident from the findings of the present study that beliefs about self, relationships, knowledge and change were highly significant in shaping the essential nature of the teachers' orientations. However the intensity and power of these core beliefs varied depending on the individual teacher, resulting in personal and idiosyncratic orientations. Consequently, it was not feasible to categorise the teachers on the basis of categories used in the literature because the descriptive schemes presented by others (Pratt, 1992; Fox, 1983; Kemmis et al. 1985) did not reveal the interconnections evident within each teacher's orientation.

It was possible to conceptualise the beliefs and orientations of the teachers by investigating the nature and influence of their core beliefs and how they were thematically interconnected with the secondary beliefs. It was noted in Chapter Five how a summary label could be applied to individual orientations to capture that individual's theme. It was these labels which demonstrated that each teacher's four beliefs were not just a pattern

(such as reported by Samuelowicz & Bain, 1992, for example) but a thematically defined pattern. The method used for determining individual labels revealed the significance teachers placed on the consistency of self-characterisation to highlight their 'professional centre' as well as the value of self-nominated images in partly reflecting their theme. This use of images supports the claims of others (Pajares, 1992; Nias, 1987; Munby, 1986; Calderhead & Robson, 1991) who have found that images are an important tool for understanding the unity and flow within teachers' practices. This study also adds to these findings by suggesting that images cannot be understood as discrete elements, but are internally coherent and individualised.

Jenny's orientation was characterised by her 'personally transforming' theme and encapsulated the centrality of her four interdependent beliefs about self, self-in-relationships, valued knowledge and her role in the process and content of change. For her, as her 'humanness' image revealed, it was essential that she continually reflected on self, the nature of the relationships she formed and how knowledge was continually being constructed and reconstructed through social interaction in the classroom. The combination of these four beliefs was consistently emphasised by Jenny as being central to how she viewed the world and what she had to do to enhance her practice. In turn, her core beliefs, which were also her theme-defining beliefs, maintained a tight control over her secondary beliefs, and associated practices about teaching, learning and assessment. It was noted how Jenny's classroom practices focused on responding to the individual needs and interests of each child when possible, because she believed that personal growth and liberation were of paramount importance.

Tony's orientation was characterised initially by his 'developing self to promote student growth orientation' theme. His image of self as someone who could 'make a difference' captured the significance he placed on self-knowledge and awareness, and the implications this focus had for understanding and respecting the integrity of the individual. For Tony, the process and content of reflection was intrinsic, and like Jenny, it was central to his orientation and for adapting his teaching to enhance each student's capabilities. His

systemic approach to reflection enabled him to adopt a proactive approach to change when he encountered challenges to his long-held knowledge beliefs. The change Tony made to his knowledge beliefs, and the implications this change had for his classroom practices, reflected the key role these beliefs held over his secondary beliefs about teaching, learning and assessment. This shift in his knowledge beliefs was reflected in his new theme of 'developing self to promote independent learning.' At the end of the two years it was evident that the theme of Tony's orientation consisted of four central or core beliefs (knowledge, self-improvement, relationship and self) that were mutually influential and disposed him to practices which were consistent with the multi-age ethos of the school.

Karen's orientation was initially characterised by the theme 'caring with control', because she had difficulty with 'letting go' of her pedagogical beliefs and knowledge beliefs whilst simultaneously caring for the individual student. Her core beliefs about caring for the individual, her self-defining image of the vulnerable neophyte teacher, and the gatekeeper role of her knowledge beliefs set the theme of her orientation and determined the nature of the dilemmas she encountered during the two years of the study. Her approach to change, unlike that of Tony and Jenny, was not a central element of her orientation, but rather was concerned with responding to the immediate practical challenges she confronted. The changes that Karen undertook over the two years focused on her teaching and learning beliefs and had implications for her secondary beliefs about teaching learning and assessment. As Karen introduced student-focused strategies she came to realise that she could enact her constructivist beliefs by allowing students to accept some responsibility for when and how they worked on the 'received knowledge.' However, Karen continued to express concerns about relinquishing control over the what of syllabus knowledge so that she could individualise the curriculum, and she remained conflicted about how student-referenced assessment practices could be implemented. This clash of beliefs was reflected in her orientation at the end of the two years of this study which was characterised by 'caring with shared control.'

Kathy's orientation was typified by the theme 'catering for the diversity of needs and differences.' Her image of the classroom as a 'garden' and herself as a 'helper' partly reflected this theme, as well as the emphasis Kathy consistently placed on the need for supportive relationships where students could discover knowledge. The thematically defining and core beliefs about self and self-in-relationships influenced Kathy's secondary beliefs and defined her practice within the classroom. Kathy's multi-age classroom was characterised by one which valued a developmentally appropriate approach that recognised the importance of power sharing through the use of cooperative learning and peer tutoring.

Donna's orientation was characterised by the theme 'nurturing a family ethos' because she stressed the importance of self as 'mother/father' in conjunction with a mutually supportive relational ethos within the classroom, based on a 'family' model, where the students could construct knowledge. These core beliefs had implications for her secondary beliefs and practices, which respected the dignity and worth of the individual student in a socially interactive and student-focused environment.

The theme of *Dave's* orientation ('tolerance and acceptance of difference') was determined by his need to ensure that he created a relational environment in which individual needs and differences were catered for. Dave's self-nominated image of 'father' and 'protector' partly reflected his own personal biography as second language speaker in primary school and his own desire to ensure the syllabus catered for individual learning needs. These thematically defining core beliefs explained why his secondary beliefs and practices focused on the need to maintain and protect the self-esteem and individuality of the students. However, unlike Jenny and Tony, Kathy, Dave and Donna's approach to the process and content of change was not central to their orientations but ancillary, and consequently were more reactive than proactive in changing their practice.

From this evidence it was possible to conceptualise teachers' beliefs as being systematically interconnected rather than being isolates or uniformly interrelated. It was

found that each teacher had core beliefs that were thematically central and which influenced their secondary beliefs. Although these secondary beliefs were not inherently thematic it was found that they are influenced in thematically derived ways. It was this combination of professionally relevant beliefs which formed an orientation that was distinctive to each teacher. It was also the configuration of these core beliefs that highlighted the importance of investigating belief combinations rather than discrete beliefs when attempting to understand the teacher as a person.

Beliefs about the self—in combination with relational, knowledge and change beliefs—for example, were a potent indication of how the teachers understood and expressed their personal identity and therefore these self-characterising beliefs became integral in determining the thematic characteristics of individual orientations. Although the importance of the self has been addressed in the literature (Lipka and Brinthaupt, 1999), its thematic significance in shaping the nature of teachers' orientations has not been fully investigated, particularly by the way it is functionally connected with the other centrally defining beliefs. It became evident from this study that the teachers' sense of self was expressed in different ways and often travelled in disguise such as images and dilemmas.

Relational beliefs were a common feature of all the teachers and were highly significant in determining the theme of individual orientations. These beliefs were a longstanding element of the teachers' orientations and because they were consistent with the approach of the school, remained stable and unchanged over the time of this study. It was these relational beliefs that made it possible to draw some comparisons with those orientations postulated in the literature (Kemmis et al. 1983; Pratt, 1992; Fox, 1983) that identify relationships as thematically significant. However, the self-defining and relational beliefs could not be considered in isolation because they were thematically interconnected with knowledge beliefs. It was apparent from this study that the relationship between knowledge beliefs and relational beliefs based on an ethic of caring, was complex and had implications for beliefs about teaching, learning and assessment, because they in turn influenced classroom practice. As will be discussed in relation to question three, issues

about caring and control were intertwined with how the construction and reconstruction of knowledge was approached.

The knowledge beliefs of the teachers in this study reflected their beliefs about important knowledge and how it is constructed and reconstructed (Pajares, 1992; Peterman, 1991). In general, teachers' knowledge beliefs reflected an approach in which their role was not to dispense knowledge but to implement the syllabus in a student-focused way. However, there were variations between individual teachers. Jenny, for example, was more prepared than the other teachers in the study to focus the individual syllabus on the interests of each child because, as her image of 'humanness' highlighted, she believed that personal liberation and growth occurred when learning is a process of active knowledge construction by the individual to extract meaning from aspects of the world of interest to them.

The influence of knowledge beliefs on teachers' beliefs and practices about teaching, learning and assessment has been observed by others (Posner et al., 1982; Samuelowicz & Bain, 2001). This study added to these findings by noting that knowledge beliefs, as core beliefs, can have a key role, as evidenced by changes in Tony's and Karen's secondary beliefs and practices, thereby influencing the nature of their orientations. These shifts in Tony's and Karen's orientations were prompted by the multi-age ethos of the school, but were also influenced by their approach to self-improvement.

When conceptualising the teachers' beliefs and orientations it was found that beliefs about the process and content of self-improvement also needed to be considered as either core or secondary. Although change beliefs have not been addressed in the extant literature on orientations (Kemmis et al. 1983; Samuelowicz & Bain, 1992; Pratt, 1992), they emerged as important beliefs in this study because first, they determined the locus of control within the process of change and second, they defined whether the content of reflection was related to the core/primary beliefs or was restricted more to day-to-day dilemmas. Both Jenny and Tony identified improvement as an essential component of their belief system

because it was centrally connected to their beliefs about self, relationships and knowledge. For them it meant change was internally generated and reflection was ongoing. The remaining teachers on the other hand viewed the process of change as being predominately externally instigated and thus reflection was often focused on issues arising in and localised to the classroom context.

It could be concluded that the orientation as a whole is greater than the sum of the parts, although as has been noted it was core beliefs that set the theme for the orientation and influenced in a thematically derived way the secondary beliefs of the teachers. It was the integrated and unique characteristics of individual orientations which determined how the teachers responded to the challenges of the multi-age classroom.

The second question asked:

Question Two: How did individual orientations frame the teacher's professional practice within the multi-age classroom?

This study demonstrates that the belief orientations of the teachers in this sample framed all aspects of their professional practice in a personal way that either hindered or enhanced the implementation of the multi-age philosophy of the school.

All the teachers in this study sought to establish an orderly classroom, based on the multi-age philosophy of the school, where the personal construction of knowledge could take place within a caring environment that respected the needs of individual students. It was evident from individual stories that each teacher's pattern of classroom practice was consistent with their belief orientation/theme, highlighting the importance of core beliefs on their classroom practice. Nevertheless, there were subtle differences between the teachers that could be linked to, and explained in terms of, the relationship between core beliefs and secondary beliefs and practices. These differences between teachers' orientations were also evident with the dilemmas encountered by individual teachers and

the personal way in which they were resolved. These findings not only support those (Pajares, 1992; Calderhead & Robson, 1991; Nespor, 1987) who have noted how the influence of belief structures screen, redefine or reshape thinking and subsequent practices, but it also adds to these findings by highlighting the influence of core beliefs on individual classroom practices and dilemma negotiation.

Tony's theme of 'developing self to promote student growth/independent learning' captured the nature of his orientation which valued self-knowledge, respecting and responding to the individual needs of the students and enhancing their self-regard. Tony became aware early within his multi-age experience that his beliefs and practices, and in particular his knowledge beliefs, were challenged by the school's approach to individualised curriculum and student-referenced assessment. Tony's response to the challenges the multi-age ethos presented, and the subsequent shifts he made, were facilitated by his proactive approach to change which valued the desire to improve both personally and professionally.

As Tony began to question the nature of syllabus knowledge he became aware that his approach focused on the content of the graded syllabus documents. He acknowledged that this led to a surface approach to learning and failed to respond to the cognitive and interpersonal needs of the students. For Tony the syllabus documents, rather than remaining a prepackaged set of resources and learnings, became a set of concepts, principles and physical, social and intellectual skills. This integrated approach to the syllabus contained the possibility for investigating many different content themes that could be significantly influenced by individual or local community considerations. Tony then began to gradually refashion his ancillary teaching and learning beliefs as he reconciled his teaching and learning practices with his newfound knowledge beliefs. Strategies that he adopted in the classroom to enact these beliefs included collaborative and cooperative learning approaches, the use of higher order thinking skills and independent learning contracts. He also attempted to ensure assessment was authentic in that it was interwoven with teaching and focused on individual development against appropriate benchmarks.

At the conclusion of the two years of this study it was evident that Tony's orientation had framed his practices in a way that enabled him to make a transition from a teacher-dominated approach to one which was consistent with the approach favoured by the school. Indeed, the thematic nature of his orientation highlighted how his previously unexplored knowledge beliefs influenced his beliefs about teaching, learning and assessment and were also interconnected with his beliefs about self-improvement and self-in-relationships. This finding on the function of knowledge beliefs not only confirms the observations of others (Schommer, 1994; Pajares, 1992) but also adds to them, in conjunction with others (Samulowicz & Bain, 2001), by recognising the thematic significance of such beliefs in shaping the orientation of a teacher. Tony's story also indicated that his belief orientation enabled him to change his knowledge beliefs first, followed by changes in his beliefs and practices about teaching, learning and assessment. This conclusion, and its implications for the change process, will be further addressed when answering the next research question.

Karen's orientation was highlighted by the theme 'caring with control' because she espoused an ethic of caring and interpersonal regard whilst simultaneously attempting to maintain a tight control over the knowledge to be acquired and how it was to be learnt. It was Karen's initial orientation which clashed with the multi-age ethos of the school, because she had difficulty with individualising the curriculum, in the manner desired by the school, and ensuring assessment was student-referenced. Over the two years of this study Karen sought viable and effective examples of how to individualise the curriculum, so that she could 'let go' without feeling remiss about implementing the approved syllabus. She began to introduce student-focused learning strategies that enabled the students to work both individually and cooperatively. However, even though Karen made substantial shifts in her teaching and learning beliefs and practices, she continued to struggle with the knowledge to be acquired indicating the ongoing influence her core knowledge beliefs played in relation to her beliefs about teaching, learning and assessment. Her beliefs about assessment, for example, oscillated between a cohort-referenced and student-referenced

approach. Karen acknowledged that the change from a teacher-dominated approach to one which handed some responsibility to the students, was a significant shift for her. The motivation for the change, however, was prompted by the school's philosophy, rather than her beliefs about the importance of self-improvement, and over the two years Karen continued to seek inspiration from outside sources. This approach differed from that of Tony whose change beliefs were interconnected with his core beliefs, and emphasised an ongoing desire to improve through systemic reflection.

Kathy, Dave and Donna, found the multi-age approach of the school was substantially consistent with their own orientations and therefore they did not have to negotiate any significant dilemmas that required a major shift in beliefs. However it was evident over the two years of this study that all three teachers investigated ways in which they could enhance the learning environment through introducing child-focused learning strategies. Nevertheless, the personal nature of their orientations, expressed through their images, ensured on the other hand that their practice was framed in a manner that was unique to each. Kathy's self-image of a gardener, for example, reflected her need to respect the individuality of the students and to create an interactive learning environment in which the students could construct and reconstruct knowledge. It was this approach that helped her negotiate an early challenge she experienced when working with syllabus documents that spanned several grade levels.

Jenny's 'personally transforming' orientation was unique to this study because it reflected a sense of integration within her beliefs and practices that was not evident with the other teachers. The sense of cohesion was apparent because her core beliefs about self-regard, relationships, valued knowledge and change maintained a tight control over her thinking and her practice. It was her relational beliefs, shaped by significant and critical episodes in her personal biography, which dominated her orientation and framed her practice. Because her orientation was compatible with the multi-age philosophy of the school, Jenny did not experience any significant dilemmas when putting her beliefs into practice. Rather, the challenges she encountered were internally motivated as she continually explored

practices that hindered and enhanced the relational environment within the classroom. Jenny's 'humanness' orientation valued an approach in which the students learned to live within a community of enquiry where all were valued and where individuals chose their learning paths while respecting the rights of others. For Jenny, this meant that the individuality of the students was to be respected so that they could work at their different developmental levels without obvious remediation, thus avoiding the social or emotional damage typically caused by retention and inappropriate labelling. Typical of her practice was her approach to assessment, which stressed the need for a relational climate, free of fear, so that she could establish the learning needs of the students.

The teachers' orientations in this study structured their practice in a way that was personal and internally consistent, indicating the dynamic coupling of beliefs and practices. It was also clear that their individual orientations, shaped by their core beliefs, framed the challenges and possibilities that the multi-age ethos offered in varied and personal ways. This idiosyncratic nature of orientations has implications for the way in which professional development programs and curriculum initiatives are developed and implemented.

Question Three asked:

Question Three: What are the implications for professional in-service and for the evaluation of complex curriculum initiatives like multi-age primary schooling?

This study demonstrated that the thematic and interdependent nature of each teacher's orientation was instrumental in determining how they enacted the curriculum in the classroom, as well as being evident in their evolving perception of themselves as a multi-age teacher. These findings have implications for those interested in making substantive changes in curriculum and instructional practices through the introduction of innovative programs and the presentation of professional development opportunities. Traditional professional development programs have often been relatively brief and aimed at

implementing policy initiatives without considering the implications for the personal and idiosyncratic nature of teachers' orientations (Butler, 1992; Calderhead, 1993; Pennell & Firestone, 1996). Curriculum innovations, such as multi-age, which are contrary to 'conventional wisdom,' have similarly been presented without taking into account the core beliefs of teachers which may be at variance with the innovation. It is not surprising therefore, as was the case in this study, that teachers when confronted with innovative and challenging professional development programs will meet dilemmas that are highly personal and may not be resolved in a manner consistent with the innovation. It was evident from the sample in this study that:

- the patterns of, and reasons for, change were complex
- therefore it is unlikely that professional in-service will succeed if it is based on only one of the models of change proposed in the literature
- moreover, it is unlikely that complex curriculum initiatives can be properly evaluated without regard to the phenomena with which this thesis deals
- sometimes a teacher changes his/her beliefs and practices (eg., Karen 's change in learning beliefs and Tony's change in knowledge beliefs)
- sometimes teachers don't change despite the press of school ethos and collegial support (eg., Karen's ongoing issue with assessment and individualising the curriculum)
- sometimes beliefs will change first (eg., Tony), but sometimes practices will lead beliefs (eg., Karen's change in learning practices leading to her endorsement of constructivist learning beliefs)
- sometimes change is internally motivated (desire for self-improvement), sometimes it is externally driven (in response to teaching and learning dilemmas).

All the teachers in this study encountered the on-going challenges of individualising the curriculum and implementing a student-referenced approach to assessment, but at no stage did they behave irrationally or become obstructionist, as has been observed by others who have investigated teachers' responses to similar innovations (Doyle & Ponder, 1977; Sparkes, 1989). On the contrary, perhaps because their professional orientations were broadly consistent with the school's multi-age ethos, each of the teachers adopted an approach to improvement which was both personal and rational.

The complex nature of the beliefs implicated in teachers' dilemmas demonstrated that they did not experience these dilemmas as the neat dichotomous situations described by others (for example, Berlak & Berlak, 1987). Rather, it was noted that some beliefs are more critical to change than others, as indeed would seem to follow from the distinction between core and secondary beliefs.

For Karen, for example, the process of change was intense and demanding, because she attempted to assimilate practices consistent with the multi-age approach, found these practices clashed with her core beliefs, and then began a process of accommodation which was long and drawn out. Karen's initial theme, 'caring with control', reflected how her core beliefs about self, self-in-relationships and knowledge were mutually defining and constraining. Karen's knowledge beliefs were the major impediment to her implementing an individualised curriculum consistent with the multi-age philosophy of the school. These knowledge beliefs were also supported by her relational beliefs which meant more than nurturing and caring for the students; it meant ensuring that her students learned what the syllabus documents required for children of the age-grade involved.

Karen's attempts at resolving her dilemma involved a process of accommodation in which she sought and found viable and plausible examples of individualisation of the curriculum so that she could 'let go' without feeling she had failed her students and their parents. It was noted in chapter five how Karen's secondary teaching and learning beliefs changed in

tandem with her teaching and learning practices, followed by changes in her beliefs about teaching and learning. This process of change is consistent with the findings of others (eg., Fullan, 1992; Gusky, 1986), inasmuch as a change in practice precedes and give rise to a change in belief. However, despite the changes Karen made to her teaching and learning beliefs—which were supported by her beliefs about caring—her knowledge beliefs continued to restrain her from fully accommodating to the multi-age philosophy favoured by the school. This ongoing dilemma was evident in Karen's attempts at the end of this study to maintain control over the content of the graded syllabus, whilst at the same time individualising the curriculum, as well as her equivocation over a shift from grade-referenced to child-referenced assessment. This complex characteristic of belief systems has implications for professional development and innovative programs because any attempts to accelerate individuals through these programs may encounter complex belief blockages, depending on the relationships between the beliefs of the teachers and the beliefs inherent in the program.

Tony provides a contrary example of belief change preceding and predisposing a change in practice. He shifted from a strong belief in the received (age-graded) curriculum to an equally strong belief in the individualised curriculum without experiencing the kind of impasse encountered by Karen. Tony's case demonstrates that it is possible to resolve dilemmas surrounding the knowledge domain when systematic reflection is part of the orientation and relational beliefs are congruent with the innovation or professional development program being implemented. Tony became aware of important inconsistencies between his beliefs about the centrality of the content knowledge in the graded syllabus documents and his need to respond to the learning needs of the individual student. Given his strong convictions that he should change so as 'to make a difference'—by creating a relational environment in which the learning needs of the individual were catered for—the focus of his reflection at that time was on his beliefs about knowledge, leading to a change in those beliefs and subsequently to changes in his teaching and learning practices. In other words, contrary to Gusky's (1986) 'practice change before belief change' model, it was the interrelationship among Tony's beliefs, in which he was

aware of the inconsistency, that enabled him to change his knowledge beliefs first, followed by changes in his secondary beliefs and practices.

This characteristic of belief systems—where the functional connections among core beliefs can exert a positive influence towards change in secondary beliefs and practices—contributes to the theory on teacher's beliefs and has implications for professional development. First it highlights the gatekeeper role that knowledge beliefs may play through their interdependence with beliefs about self, self-in-relationships and change belief. Second it highlights the need to ensure that this interrelationship is considered when undertaking change, because as has been noted earlier, beliefs often aren't considered at all.

6.4

IMPLICATIONS FOR FURTHER RESEARCH

These case studies and subsequent analysis and findings, have implications for further research on the nature and content of teachers' orientations. If some beliefs are core, and if they are mutually influential and defining, then it will be necessary to investigate teachers' beliefs and practices from an integrated rather than fragmented perspective. This approach to research on teachers' beliefs and practices will need to think in terms of connections among beliefs forming a personally themed orientation instead of in terms of beliefs as independent identities. In particular, it will be necessary to identify those beliefs that are core and how they define an idiosyncratic and discernable orientation to teaching and learning. If, as became evident from this study, images can be an important element, amongst others, in helping to determine a teacher's theme and core beliefs then their significance in labelling individual orientations needs to be further explored. The images were also implicated in the dilemmas the teachers encountered, and offered an analytic tool for understanding the personalised ways in which the teachers confronted similar dilemmas about the individualised curriculum and student-referenced assessment.

If the teachers' sense of self is deeply imbedded in their core beliefs, as this study suggests, then it is understandable why change may be difficult to contemplate when these beliefs are challenged. Because the dilemmas some teachers experienced challenged core aspects of their belief systems, it is not surprising there was significant risk of either assimilating or rejecting those aspects of an innovation that were discrepant. Karen, for example, didn't assimilate the individualised curriculum but rather rejected it by retaining an age/grade frame of reference. It was also obvious that the core beliefs of some teachers enabled them to resolve dilemmas and assimilate new thinking about the curriculum and assessment. However, as was the case with Tony, this change to key fundamental beliefs did not come easily and there was evidence of some 'belief-resistance'. The study of dilemmas, and their source, therefore becomes increasingly pertinent in the task of understanding how knots within a teacher's thinking can be addressed when confronting innovations or challenging professional development programs.

If, as became evident in this study, knowledge beliefs, and in particular age-graded knowledge beliefs, are a significant source of dissonance, and become gatekeepers to change in secondary beliefs and practices about teaching and learning, then their role in the process of change needs to be investigated. It was apparent that knowledge beliefs do not act in isolation but interact with, and are influenced by, beliefs about self, relationships and the process and content of change. Beliefs about relationships—which contained a subtle and complex mixture of beliefs about caring and control—were inextricably linked with knowledge beliefs and pedagogical beliefs and practices. This relationship between knowledge beliefs and relational beliefs may prove valuable in understanding the personalised approach individual teachers adopt when either assimilating or accommodating to the unfamiliar within their orientation. However, it was noted that the role of change beliefs, either as core or secondary beliefs, also needs to be considered when investigating each teacher's approach to the challenges of multi-age.

Not all the teachers in this study approached the challenge of change in the same way. It was evident that individuals had constructed their own narrative of the need for change,

and that this tended to dominate the self-improvement agenda. The process and content of each teacher's beliefs about change determined and influenced what they reflected upon, either an ongoing reflection on core beliefs, as was the case with Tony and Jenny (who managed to effectively link the transpersonal with the interpersonal) or an immediate response to nagging incidents that occurred within the classroom context. It has often been taken for granted with professional development approaches that teachers will reflect critically rather than technically when confronted with challenges and dilemmas. However, as this study demonstrated, this is not necessarily the case because reflection is determined by the belief system which, in turn, ultimately frames the performance. Further research into the relationship between dilemmas caused by contextual settings, the content and process of reflection, and changes in beliefs and practices needs to be conducted. A particular focus of this research could be upon how the thematic characteristics of an orientation determine whether changes in practice either precede, interact with, or follow changes in beliefs and whether the approach to reflection is central to the direction of change that occurs. There are suggestive leads in the present research.

It was noted for example how Jenny, prior to joining St Clares, and Tony, while at St Clares, underwent significant shifts in their core knowledge beliefs after confronting significant critical incidents within their classrooms. Jenny commented how a special needs student with Downs Syndrome challenged her to question whose knowledge was being valued when teaching this child. Tony, likewise faced a similar challenge when confronted by a broad range of developmental levels within his multi-age class. What both teachers had in common was that they made a significant shift in their core knowledge beliefs first with subsequent implications for their pedagogical beliefs and practices. What appeared to facilitate the change, albeit drawn out and painful, was the role of change beliefs which were thematically defining and core and embedded in a sense of self. Karen, on the other hand did not make the paradigm shift required to individualise the curriculum because her change beliefs focused on practical challenges and dilemmas and were not thematically significant. Rather as became evident with Karen, a shift occurred in her teaching and learning practice followed by changes in her teaching and learning beliefs.

An unexplored area of this thesis, and one which needs to be investigated if a comprehensive understanding of belief systems is to be further achieved, is whether the degree, as well as the type, of connectedness is important in deciding between core and secondary beliefs. The degree criterion is one which has been noted by others (Pajares, 1992; Rokeach, 1968) as being a defining characteristic of core beliefs. From the orientation maps in this thesis it was not possible to demonstrate whether this criterion was applicable.

If there is the possibility of a clash between the belief orientations of individual teachers and the beliefs, either implicit or explicit, underpinning and innovation like multi-age then there may be implications for the evaluation of these innovations. It has been common practice when evaluating the educational effectiveness of multi-age (Anderson, 1993; Chase & Doan, 1994) to rely solely on how its learning outcomes compare with established practices. However, as this study has demonstrated, not only the educational consequences of an innovation need to be taken into account, but also how compatible each teacher's orientation is with the ethos undergirding the innovation, and consequently how well it was implemented in each classroom.

It was clear from this study that, if reasonable inferences about orientations require an understanding of what individual teachers intend, do and say, then the researcher is faced with a very complex task, and so must use the most sensitive and responsive approach to research. These approaches need to be flexible in application and allow for an integrated understanding of individual orientations. This flexible research perspective would serve the purpose of both clearly conceptualising the nature of teachers' orientations and that of multi-age and how the interplay between the two either hinders or enhances teachers' practices.

REFERENCES

- Abelson, R. (1979). Differences between belief systems and knowledge systems. *Cognitive Science*, 3, 355-366.
- Anderson, J.R. (1985). *Cognitive psychology and its implications*. San Francisco: Freeman.
- Anderson, L. M. & Bird, T. (1995). How three prospective teachers construed three cases of teaching. *Teaching and Teacher Education*, 11, 479-499.
- Anderson, R. H. (1992). *The nongraded elementary school: Lesson from history*. Paper presented at the Annual Meeting of the American Educational Research Association, April.
- Anderson, R. H. (1993). The Return of the Nongraded Classroom. *Principal*, January.
- Angell, A. V. (1998). Learning to teach social studies: A case study of belief restructuring. *Theory and Research in Social Education*, 26, 509-529.
- Ball, S. J. & Goodson, I. (1985). Understanding teachers: Concepts and contexts. In S. Ball & I. Goodson (Eds.), *Teachers Lives and Careers*. London: The Falmer Press.
- Bandura, A. (1986). *Social foundations of thought and action. A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Barnes, D. (1992). The significance of teachers' frames for teaching. In T. Russell & H. Munby (Eds.), *Teachers and teaching: From classroom to reflection*. 9-32. London: The Farmer Press.
- Bartlett, L. (1991). The dialectic between theory and method in critical interpretative research. *British Educational Research Journal*, 17, 19-31.
- Bassey, M. (1999). *Case study research in educational settings*. Buckingham, England: Open University Press.
- Battersby, D. (1981). Craft knowledge for primary student teachers. *Australian Journal of Teaching Practice*, 2, 23-27.

- Behar Horenstein, L. S., Pajares, F., & George, P. S. (1996). The effect of teachers' beliefs on students' academic performance during curriculum innovation. *High School Journal*, 79,324-332.
- Bem, D. (1970). *Beliefs, attitudes and human affairs*. Belmont, California: Brooks/Cole.
- Bennett, N., O'Hare, E., & Lee, J (1983). Task processes in mixed and single-aged classes. *British Educational Journal*,9, 41-56.
- Bereiter, C., & Scardamalia, M. (1992). Cognition and curriculum. In P. W. Jackson (Ed.), *Handbook of Research on Curriculum* (pp. 517-542). New York: Macmillan.
- Berlak, A. & Berlak, H. (1987). Teachers working with teachers to transform schools. In W. J. Smyth (Ed.). *Educating teachers: Changing the nature of pedagogical knowledge*. Lewes: Falmer
- Berliner, D. (1987). Ways of thinking about students and classrooms by more and less experienced teachers. In J. Calderhead (Ed.), *Exploring Teachers' Thinking* (pp. 60-83). London: Cassell.
- Beyer, L. E. (1991). Teacher education, reflective inquiry and moral action. In B. R. Tabachnich & K. Zeichner (Eds.), *Issues and practices in inquiry-oriented teacher education*. (pp. 113-129). London: The Falmer Press.
- Bird, T., Anderson, L. M., Sullivan, B. A. & Swindler, S. A., (1993). Pedagogical balancing acts: Attempts to influence prospective teachers' beliefs. *Teacher and Teacher Education*, 9, 253-267.
- Blackledge, D. A., & Hunt, B. J. (1985). *Sociological interpretations of education*. London: Croom Helm.
- Blumer, H. (1989). *Symbolic interactionism: Perspective and method*. Berkeley, Los Angeles, CA: University of California Press.
- Borich, G. D. (1999). Dimensions of self that influence effective teaching. In R. P. Lipka & T. M. Brinthaupt (Eds.), *The role of self in teacher development* 92-121. New York: State University of New York Press.
- Borko, H., Bellamy, M., & Sanders, L. (1993). A cognitive analysis of patterns in science instruction by expert and novice teachers. In T. Russel & H. Munby (Eds.), *Teachers and Teaching*. (pp.90-108). London: The Falmer Press.

- Borko, H., Mayfield, V., Marion, S., Flexer, R., & Cumbo, K. (1997). Teachers' developing ideas and practices about mathematics performance assessment: Success, stumbling blocks, and implications for professional development. *Teaching and Teacher Education*, 13, 259-278.
- Brickhouse, N. W. (1990). Teachers' beliefs about the nature of science and their relationship to classroom practice. *Journal of Teacher Education*, 41(3), 53-62.
- Britzman, D. P. (1986). Cultural myths in the making of a teacher: Biography and social structure in teacher education. *Harvard Educational Review*, 5, 442-456.
- Brousseau, B. A., Book, C., & Byers, J. (1988). Teacher beliefs and the cultures of teaching. *Journal of Teacher Education*, November, 33-39.
- Brown, C. A., & Baird, J. (1993). Knowledge, beliefs and attitudes. In P. S. Wilson (Ed.), *Research ideas for the classroom: High school mathematics*. New York: Macmillan Publishing Company.
- Buchmann, M. (1987). Teaching knowledge: The lights that teachers live by. *Oxford Review of Education*, 13, 151-164.
- Bullock Report. (1975). *Mixed ability work in comprehensive schools*. London: HMSO.
- Bullough, R. (1987). Planning and the first year of teaching. *Journal of Education for Teaching*, 13(3), 121-130.
- Burgess, R. G. (1988). Examining classroom practice using diaries and diary interviews. In P. Woods and A. Pollard (Eds). *Sociology and Teaching: A new challenge for the sociology of education*. New York: Croom Helm
- Burroughs-Lange, S. (1994). Significant episodes in the acquisition of professional knowledge by teachers. In *Knowledge and Competence for Beginning Teachers (pp.36-48)*. Brisbane: Queensland Board of Teacher Registration.
- Buston, R. (1978). Family groupings: A structural innovation in elementary schools. *Interchange*, 8, 1-2.. 143-150.

- Butler, J. (1992). Teacher professional development: An Australian case study. *Journal of Education for Teaching, 18*(3), 58-71.
- Butler, J. (1996). Professional development: Practice as text, reflection as process, and self as locus. *Australian Journal of Education, 14*, 265-282.
- Calderhead, J. (1987, April). *Cognition and metacognition in teachers' professional development*. Paper presented at the Annual Meeting of The American Educational Research Association. Washington, DC.
- Calderhead, J. (1988). *Teachers' Professional Learning*. London: The Falmer Press.
- Calderhead, J. (1993). Dilemmas in developing reflective teaching. *Teacher Education Quarterly, 20*(1), 93-100.
- Calderhead, J., & Robson, M. (1991). Images of teaching: Student teachers' early conceptions of classroom practice. *Teaching and Teacher Education, 7*, 1-8.
- Calgren, I. (1990). Relations between thinking and acting in teachers' innovative work. In C. Day, M. Pope, & P. Denicolo (Eds.), *Insights into teachers' thinking and practice* 200-212. London: The Falmer Press.
- Candy, P. C. (1989). Alternative paradigms in educational research. *Australian Educational Researcher, 16*(3), 1-11.
- Carr, W. (1989). *Quality in Teaching*. London: Falmer Press.
- Carter, J. (1994). Breaking out of the box: Learning in the multi-age primary school. *Primary Education, 25*(4), 12-23.
- Carter, K. (1992). Teachers' knowledge and learning to teach. In W. R. Houston (Ed.), *Handbook of research on teacher education*. (pp. 291-310). New York: Macmillan.
- Chase, P., & Doan, J. (1994). *Full Circle: A new look at multiage education*. Portsmouth, NH: Heinemann.
- Chen, A., & Ennis, C. (1995). Teachers's value orientations in urban and rural settings. *Research Quarterly for Exercise and Sport, 66*, 41-50.

- Cheng, Y. (1993). Profiles of organisational culture and effective schools. *School Effectiveness and School Improvement*, 4(2), 85-110.
- Clark, C. M., & Peterson, P.L. (1986). Teachers' thought processes. In M.C. Wittrock (Ed.), *Handbook of Research on Teaching* (pp. 255-296). New York: McMillan.
- Clark, M., & Yinger, R. J. (1987). Teacher planning. In J. Calderhead (Ed.), *Exploring teachers' thinking*. London: Cassell Education Limited.
- Clift, R., Robert Houston, W. & Pugach, M. (1990). *Encouraging reflective practice in education: An analysis of issues and programs*. New York: Teachers College Press.
- Cohen, M. (1987). Improving school effectiveness: Lessons from research. In V. Koehler (Ed.), *Handbook for research on teaching*. New York: Longman.
- Cohen, L., & Manion, L. (1994). *Case studies, Research methods in education*. London: Routledge.
- Cole, M. (1985). 'The Tender Trap?' Commitment and consciousness in entrants to teaching. In S. J. Ball and I. F. Goodson (Eds.), *Teachers' lives and careers*. London: Falmer.
- Connell, D. (1987). The first thirty years were the fairest. *Young Children*, 42 (5), 30-39.
- Connelly, F. M., & Clandinin, D.J. (1988). *Teachers as curriculum planners: Narratives of experience*. New York: Teachers College Press and The Ontario Institute for Studies in Education.
- Craven, J. A. (1998). Relationships between new science teachers' beliefs and student perceptions of the learning environment. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 58(8-A), 3069.
- Crotty, M. (1998). *The foundations of social research*. Sydney: Allen and Unwin.
- Daniel, T.C., & Terry, K. W. (1995). *Multiage classrooms by design: Beyond the one-room school*. California: Sage Publications.

- Darling-Hammond, L., & Cobb, V. (1996). The changing context of teacher education. In F. Murray (Ed.), *The teacher educator's handbook: Building a knowledge base for the preparation of teachers* (pp. 14-62). San Francisco: Jossey Bass.
- Davis, E. (1983). *Teachers as curriculum evaluators*. Sydney: George Allen and Unwin.
- Day, C. (1990). The development of teachers' personal practical knowledge through school-based curriculum development projects. In C, Day, M. Pope and P. Denicolo (Eds.), *Insight into teachers' thinking and practice* (pp. 213-239). London: The Falmer Press.
- Day, C. (1993). Reflection: A necessary but not sufficient condition for professional development. *British Educational Research Journal*. 19, 83-92.
- Day, C., Calderhead, J., & Denicolo, P. (1993). *Research on teacher thinking: Understanding professional development*. London: The Falmer Press.
- Day, C., Pope, M., & Denicolo, P. (1990). *Insight into teachers' thinking and practice*. London: The Falmer Press.
- Deal, T.E., & Peterson, K. D. (1994). *The leadership paradox: Balancing logic and artistry in schools*. San Francisco: Jossey-Bass
- Denzin, N. K., & Lincoln, Y. S. (1998). *The landscape of qualitative research*. London: Sage Publications.
- Department of Education Queensland (1988). *The P-10 curriculum framework*. Brisbane: Goprint
- Department of Education Queensland (1994). *Principles of effective learning and teaching*. Brisbane: Goprint
- Dewey, J. (1933). *How we think*. Chicago: Regnery.
- Donmoyer, R. (1996). The concept of a knowledge base. In F. Murray (Ed.), *The teacher educator's handbook: Building a knowledge base for the preparation of teachers* (pp. 92-119). San Francisco: Jossey Bass.
- Doyle, W., & Ponder, G. A. (1977). The practicality ethic in teacher decision making. *Interchange*, 8(3), 1-13.
- Dressel, P. L. (1982). *On teaching and learning in college*. San Francisco: Jossey-Bass.

- Dreyfus, J. P. (1995). Teacher's core instructional beliefs and implementation of curriculum change: A multi-site case study. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 55 (11-A), 3397.
- Dunkin, M. J. (1995). Synthesising research in education: A case study of getting it wrong. *Australian Educational Researcher*, 22, 17-33.
- Education Victoria. (1995). *Victorian first steps: Multi-aging pilot project for the first three years of schooling*. Melbourne: Education Victoria.
- Eisenhart, M., Shrum, J., Harding, J., & Cutherbert, A. (1988). Teacher beliefs: Definitions, findings and directions. *Educational Policy*, 2, 51-70.
- Elbaz, F. (1983). *Teacher thinking: A study of practical knowledge*. London: Croom Helm.
- Ellison, A. (1972). The Myth behind Graded Content. *The Elementary School Journal*, January, 213-221.
- Ennis, C. D., Cothran, D. J., & Loftus, S. J. (1997). The influence of teachers' educational beliefs on their knowledge organisation. *Journal of Research and Development in Education*, 30(2), 73-86.
- Eraut, M. (1985). Knowledge creation and knowledge use in professional contexts. *Studies in Higher Education*, 10(2), 117-133.
- Ernest, P. (1989). The knowledge, beliefs and attitudes of the mathematics teacher: A model. *Journal of Education for Teaching*, 15(1), 13-33
- Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Researcher*, 38, 49-65.
- Feiman-Nemser, S., & Floden, R. E. (1986). The cultures of teaching, In M.C. Wittrock (Ed.), *Handbook of Research on Teaching*. New York: MacMillan.
- Feldman, J., & Gray. P. (1999). Some educational benefits of freely chosen age mixing among children and adolescents. *Phi Delta Kappan*, 80(7), 507-512.
- Fenstermacher, G. (1986). Philosophy of research on teaching. Three aspects. In M. C. Wittrock (Ed.), *Handbook of research on teaching*. (pp. 37-50). New York: Macmillan.

- Fogarty, R. (1993). *The Multiage classroom: A collection*. Sydney: Highett, Hawker and Brownlow.
- Foss, D.H., & Kleinsasser, R. C. (1996). Preservice elementary teachers' views of pedagogical and mathematical content knowledge. *Teaching and Teacher Education*, 12(4), 429-442.
- Fox, D. (1983). Personal theories of teaching. *Studies in Higher Education*, 8(2) 151-162.
- Freire, P. (1985). *The politics of education*. Massachusetts: Bergin and Garvey.
- Fullan, M. (1992). *The meaning of educational change*. London: Cassell Education Press.
- Gardner, H. (1987). *The mind's new science: A history of the cognitive revolution*. New York: Basic Books.
- Gaustad, J. (1995). Implementing the multiage classroom. Eugene, Oregon: *ERIC Clearing house on Educational Management*.
- Gitlin, A. (1990). Educative research, voice, and school change. *Harvard Educational Review*, 60(4), 367-381.
- Glasson, G. E., & Lallik, R.V. (1993). Reinterpreting the learning cycle from a social constructivist perspective: A qualitative study of teachers' beliefs and practices. *Journal of Research in Science Teaching*, 2, 180-207.
- Goldsmith, L. T., & Shifter, D. (1997). Understanding teacher in transition: Characteristics of a model for the development of mathematics teaching. In E, Fennema (Ed.). *Mathematics teachers in transition. Three studies in mathematical thinking and learning series* (pp. 19-54). Mahway, NJ: Lawrence Erlbaum.
- Golombek, P. R. (1998). A study of language teachers' personal practical knowledge. *TESOL Quarterly*, 32(3), 447-464.
- Gomulchuk, S. L., & Piland, W.E. (1995). Teacher attitudes towards multi-age classes. *Educational Canada*, 35(4), 28-32.
- Goodlad, J, and Anderson, R. (1987). *The non-graded elementary school*. New York: Teachers College Press.

- Goodman, J. (1988). Constructing a practical philosophy of teaching: A study of preservice teachers professional perspectives. *Teaching and Teacher Education, 4*, 121-137.
- Griffiths, M. (1993). Educational change and the self. *British Journal of Educational Studies, 41*(2), 150-160.
- Griffiths, M., & Tann, S. (1991). Ripples in the reflection. In P. Lomax (Ed.), *Managing better schools and colleges: An action research way*. Clevedon: Multilingual Matters.
- Grossman, P., & Richert, A. (1988). Unacknowledged knowledge and growth: A re-examination of the effects of teacher education. *Teacher and Teacher Education, 4*, 53-62.
- Grossman, P. L. (1992). Why models matter: An alternative view on professional growth in teaching. *Research of Educational Research, 62*, 171-179.
- Grundy, S. (1987). *Curriculum: Product or Praxis*. London: The Falmer Press.
- Grundy, S. (1989). Beyond professionalism. In W. Carr (Ed.), *Quality in teaching* (pp. 79-100). London: The Falmer Press.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.
- Gudmundsdottir, S. (1990). Values in pedagogical content knowledge. *Journal of Teacher Education, 41*(3). (pp. 44-52).
- Gulliford, A. (1985). The one-room school lives. In *Principal, 65*(1), 6-12.
- Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational Researcher, 15*(5), 5-12.
- Gutierrez, R., and Slavin, R. (1992). Achievement effects of the nongraded elementary school: a best evidence synthesis. *Review of Educational Research, 62*, 333-376
- Habermas, J. (1972). *Knowledge and human interests* (J. J. Shapiro, Trans.). London: Heinemann.
- Halliwell, G. (1992). Dilemmas and images: Gaining acceptance for child-responsive classroom practices. Unpublished PhD Dissertation, University of Queensland.

- Ham, D. (1985). Multi-Age groupings. *Primary Viewpoint*, 4(1),1-6.
- Hamachek, D. (1999). Effective teachers: What they do, how they do it, and the importance of self-knowledge. In R. Lipka, & T. Brinthaupt (Eds.). *The role of self in teacher development* (pp. 189-224). Albany: State University of New York Press
- Hamilton, M.L., & Richardson, V. (1995). Effects of the culture in two schools on the process and outcomes of staff development. *Elementary School Journal*, 95(4), 367-385.
- Hamilton,D. (1989). Retrospective review of classic texts in qualitative research. *International Journal of Qualitative Studies in Education*, 2(3), 263-270.
- Hand, B., & Treagust, D. (1994). Teachers' Thoughts about changing to constructivist teaching/learning approaches with junior secondary science classrooms. *Journal Of Education for Teaching*, 20(1), 97-112.
- Hannay, L., & Seller, W. (1990). The influence of teachers' thinking on curriculum development decisions. In C. Day, M. Hope and P. Denicolo (Eds.), *Insights into teachers' thinking and practice*. (pp. 240-258). London: The Falmer Press.
- Hargreaves, A. (1988). Teaching quality: A sociological analysis. *Journal of Curriculum Studies*, 20(3), 211-231.
- Hargreaves, A. (1994). *Changing Teachers, Changing times*. London: Cassell.
- Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*, 11, 33-49.
- Hofer, B., & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research*, 67(1), 88-140.
- Hollingsworth, S. (1989). Prior beliefs and cognitive change in learning to teach. *American Educational Research Journal*, 26,160-189.
- Holly, M. (1984). *Keeping a personal professional journal*. Victoria: Deakin University Press.

- Holt-Reynolds, D. (1992). Personal history-based beliefs as relevant prior knowledge in coursework. *American Educational Research Journal*, 29, 325-349.
- Holt-Reynolds, D. (1994). When agreeing with the professor is bad news for preservice teachers: Jeanneane, her personal history and coursework. *Teacher Education Quarterly*, 21, 13-36.
- Hunsaker, L., & Johnston, M. (1992). Teacher under construction: A collaborative case study of teacher change. *American Educational Research Journal*, 29(2), 350-372.
- Ingham, A. (1994). *Exploring the multi-age classroom*. York, ME: Stenhouse
- Janesick, V. J. (1992). Of snakes and circles: Making sense of classroom through a case study. *Curriculum Inquiry*, 12, 161-189.
- Johnson, K. E. (1992). The relationship between teachers' beliefs and practices during literacy instruction for non-narrative speakers of English. *Journal of Reading Behaviour*, Vol 24, No. 1, pp.83-96.
- Johnson, K. E. (1994). The Emerging Beliefs and Instructional Practices of Preservice English as a Second Language Teachers. *Teaching and Teacher Education*, 10, 439-452.
- Johnston, M. (1994). Contrasts and similarities in case studies of teacher reflection and change. *Curriculum Inquiry* 24 (1), 9-26.
- Johnston, S. (1992). Images a way of understanding the practical knowledge of Student Teachers, *Teaching and Teacher Education*, 8 (2), 123-136.
- Kagan, D. M. (1992). 'Implications of research on teacher belief. *Educational Psychologist*, 27 (1), 65-90.
- Katz, L. (1990). *The case for mixed-age grouping in early education*. Illinois: Association for Supervision and Curriculum Development.
- Katz, L., Evangelou, D., & Hartman, J. A. (1990). *The case for mixed-age groupings in the early years*. Washington, DC: National Association for the Education of Young Children.
- Kember, D. (1997). *Teaching beliefs and their impact on students' approaches to learning*. In B.Dart, & G. Boukton-Lewis. (Eds.), *Teaching and Learning in Higher Education*. Camberwell, Vic: ACER Press.

- Kemmis, S. (1983). The imagination of the case and the invention of the study. In L. Bartlett, S. Kemmis & G. Gillard (Eds), *Case Study: An Overview* (pp. 89-114). Victoria: Deakin University Press.
- Kemmis, S., Cole, P., & Suggett, D. (1983). *Towards the socially critical school*. Melbourne: Victorian Institute of Secondary Education.
- Kettle, B., & Sellars, N. (1996). The development of student teachers' practical theory of teaching. *Teaching and Teacher Education*, 12, (1), 1-24.
- Kilbourn, B. (1993). Philosophical, subject matter and classroom understanding: A case of history teaching. In T. Russell & H. Munby (Eds.), *Teachers and teaching: From classroom to reflection* (pp.71-89). London: The Falmer Press.
- Kincheloe, J. L. (1991). *Teachers as researchers: Qualitative inquiry as a path to empowerment*. London: The Falmer Press.
- Kobayashi, Y. (1994). Conceptual acquisition and change through social interaction. *Journal of Research in Science Teaching*, 3, 233-241.
- Korthagen, F. A. (1988). The influence of learning orientations on the development of reflective teaching. In J. Calderhead (Ed.), *Teachers' Professional Learning* (pp. 35-50). London: The Falmer Press.
- Lacey, C. (1977). *The socialisation of teachers*. London: Methuen.
- Lambert, T. (1987). *St Clares College: A Vision Statement*. Brisbane: Mimeographed.
- Lampert, M. (1985). How to teachers manage to teach. *Harvard Educational Review*, 56, 257-277.
- Lampert, M., & Clark, C. M. (1990). Expert knowledge and expert thinking in teaching: a response to Floden & Klinzing. *Educational Researcher*, 19, 21-23.
- Lather, P. (1986). Research as praxis. *Harvard Educational Review*, Vol. 36(3), 257-271.
- Leinhardt, G. (1988). Situated knowledge and expertise in teaching. In J. Calderhead (Ed.), *Teachers Professional Learning* (pp.146-168). London: The Falmer Press.
- Leinhardt, G. (1990). Capturing craft knowledge in teaching. *Educational Researcher*, 19(2), 18-25.

- Leinhardt, G., & Smith, D. (1985). Expertise in mathematics instruction: Subject matter knowledge. *Journal of Educational Psychology, 78*, 75-79.
- Lincoln, Y. S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills, California: Sage Publications.
- Lipka, R., & Brinthaupt, T. (1999). *The role of self in teacher development*. New York: State University of New York Press.
- Lodish, R. (1992). The pros and cons of mixed-age grouping. *Principal, 71*(6), 20-22.
- Lortie, D. (1975). *School teacher: A sociological study*, Chicago: University of Chicago Press.
- Lyons, N. (1990). Dilemmas of knowing: Ethical and epistemological dimensions of teachers' work and development. *Harvard Educational Review, 60*, 159-170.
- Maeda, B. (1994). *The Multi-age Classroom: An inside look at one community of learners*. California: Creative Teaching Press.
- Marsick, V. (1987). *Learning in the workplace*. London: Croom Helm.
- Martin, L., & Pavan. (1976). Current research on open spaced, nongrading, vertical grouping and team teaching, *Phi Delta Kappan, 57*, 310-315.
- Marton, F., Dall'alba, G., & Beaty, E. (1993). Conceptions of learning, *International Journal of Educational Research, 19*(3), 277-300.
- Mason, D.A., & Burns, R.B. (1996). Teachers' views of combination classes. *Journal of Education Research, 89*, 36-45.
- Mayer, D., Cornford, L., Marland, P., & Olsen, P. (1994). Teachers' knowledge of students: A significant domain of practical knowledge? In *Knowledge and Competence for Beginning Teachers*. Brisbane: Board of Teacher Registration.
- McCombs, B. (1991). Motivated life-long learning. *Educational Psychology, 26*(2), 117-127.
- McDiarmid, G. (1994). Challenging prospective teachers' beliefs during early field experience: A quixotic undertaking? *Journal of Teacher Education, 41*(3), 12-20.

- McLaren, P. (1989). *Life in schools*. New York: Longmans.
- McLaughlin, M. W. (1993). What matters most In teachers' workplace context? In J. W. Little & M. W. McLaughlin (Eds.). *Teachers' work: Individuals, colleagues, and contexts*. New York: Teachers College Press.
- McLean, S. V. (1999). Becoming a teacher: The person in the process (pp. 55-91). In R. Lipka & T. Brinthaupt (Eds.), *The role of self in teacher development*. Albany: State University of New York Press.
- McNamara, D. (1990). Research on teachers' thinking: Its contribution to educating student teachers to think critically. *Journal of Education for Teaching*, 16 (2), 147-159.
- Mead, G. H. (1934). *Mind, self and society*. Chicago: University of Chicago Press.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education* (Rev. and expanded ed.). San Francisco, CA: Jossey-Bass.
- Milburn, D. (1993). A study of multi-age or family-grouped classrooms. *Phi Delta Kappan*, 62(7), 513-524.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: A sourcebook of new methods* (2nd ed.). Newbury Park, CA: Sage.
- Miller, W. (1995). Are multi-age practices the missing link in the educational reform debate? *NASSP Bulletin*, 79(586), 27-32.
- Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1990). *In-depth interviewing: Researching people*. Melbourne: Longman Cheshire
- Munby, H. (1982). The place of teachers' beliefs in research on teacher thinking and decision making, and an alternative methodology. *Instructional Science*, 11, 201-225.
- Munby, H. (1986). Metaphor in the thinking of teachers: an exploratory study. *Journal of Curriculum Studies*, 18, 197-209.
- Munby, H., & Russell, T. (1989). Educating the reflective teacher: An essay review of two books by Donald Schon. *Journal of Curriculum Studies*, 21, 71-80.

- Mycock, M. A. (1972). Vertical Groupings. In V. Rogers (Ed.), *Teaching in the British primary school* (pp. 34-59). New York: McMillan and Company.
- Neale, D. C., Smith, D., & Johnson, V.G. (1990). Implementing conceptual change teaching in primary science. *The Elementary School Journal*, 91(2), 109-131.
- Nespor, J. (1987). The role of beliefs in the practice of teaching. *Curriculum Studies*, 19 (4), 317-328.
- Nettle, E. B. (1998). Stability and change in the beliefs of student teachers during practice teaching. *Teaching and Teacher Education*, 14 (2), 193-204.
- Nias, J. (1987). *Seeing anew: Teachers' theories in action*. VIC: Deakin University Press.
- Nias, J. (1989). *Primary teachers talking: A study of teaching as work*. London: Routledge.
- Nisbett, R., & Ross, L. (1980). *Human inferences: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice-Hall.
- O'Connor, C. R. (1996). *A case study of the implementation of a nongraded, multiage continuous progress primary program*, OH: Eric Clearinghouse.
- Olson, J. R., & Singer, M. (1995). Examining teacher beliefs, reflective change, and the teaching of reading. *Reading Research and Instruction*, 34(2), 97-110.
- Olson, J.K. (1980). Teacher constructs and curriculum change. *Journal of Curriculum Studies*, 12, 1-11.
- Olson, J.K. (1988). *Schoolworlds/microworlds: Computers and the culture of the school*. England: Pergamon.
- Pajares, M. F. (1992). 'Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62(3), 307-332.
- Papay, J. P., & Costello, R.J. (1975). Effects of trait and state anxiety on the performance of elementary school children in traditional and individualised multiage classrooms. *Journal of Educational Psychology*, 67, 840-846.
- Pavan. B. N. (1992). The benefits of nongraded schools. *Educational Leadership*, 50(2), 22-25.

- Pennell, J. R., & Firestone, W.A. (1996). Changing classroom practices through teacher networks: Matching program features with teacher characteristics and circumstances. *Teacher College Record*, 98(1), 46-76.
- Peterman, F. P. (1991). *An experienced teacher's emerging constructivist beliefs about teaching and learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.
- Peterson, P. L., Fennema, E., Carpenter, T. P., & Loef, M. (1989). Teachers' pedagogical content beliefs in mathematics. *Cognition and Instruction*, 6, 1-40.
- Pollard, A., & Tann, S. (1989). *Reflective teaching in the primary school*. London: Cassell.
- Popkewitz, T. (1988). Culture, pedagogy and power: Issues in the production of values and colonialisation. *Journal of Education*, 170(2), 74-80.
- Posner, G. J., Hewson, P. W., & Gertzog, W. A. (1982). Accommodation of a scientific conception: Toward a theory of conceptual change. *Science Education*, 66, 211-227.
- Powell, R. (1996). Epistemological antecedents to culturally relevant and constructivist classroom curricula: A longitudinal study of teachers' contrasting world views. *Teaching and Teacher Education*, 12(4), 365-384.
- Pratt, D. (1993). On the merits of multiage classrooms: The upgrading of America. *Research in Rural Education*, 3 (3), 83-87.
- Pratt, D.D. (1992). Conceptions of teaching. *Adult Education Quarterly*, 42, 203-220.
- Prawat, R. S. (1992). Teachers' beliefs about teaching and learning: A constructivist perspective. *American Journal of Education*, 36, 355-396.
- Provenzo, E. F., McCloskey, G. N., Kottkamp, R. B., & Cohn, M. M. (1989). Metaphor and meaning in the language of teachers. *Teachers College Record*, 90, No4, 552-573.
- Queensland Department of Education (1994). *Shaping the Future*. Brisbane: Government Printer.

- Queensland Department of Education. (1988). *The P-10 Curriculum Framework*. Brisbane: Government Printers.
- Quinn Leering, K. A. (1999). Young children's prosocial behaviour: The relationship between kindergarten teachers' beliefs and practices. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 60(5-A), 1446.
- Raymond, A., & Santos, V. (1995). Preservice Elementary teachers and self-reflection: How innovation in mathematics teacher preparation challenges mathematics beliefs. *Journal of Teacher Education*, January-February, 46(1), 58-70.
- Rich, Y. (1990). Ideological impediments to instructional innovation: the case of cooperative learning. *Teaching and Teacher Education*, 6, 81-89.
- Richardson, V. (1992). The agenda-setting dilemma in a constructivist staff development process. *Teaching and Teacher Education*, 8(3), 287-300.
- Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. In J. Sikula (Ed.), *Handbook of research on teacher education (2nd ed.)* New York: Macmillan.
- Richardson, V., Anders, P., Tidwell, D., & Lloyd, C. (1991). The relationship between teachers' beliefs and practices in reading comprehension instruction. *American Educational Research Journal*, 28, 559-596.
- Rizvi, F. (1989). Bureaucratic rationality and the promise of democratic schooling. In Wilfred Carr (Ed.), *Quality Teaching*. London: The Falmer Press
- Rokeach, M. (1968). *Beliefs, attitudes and values: A theory of organisation and change*. San Francisco: Jossey-Bass.
- Rudduck, J. (1988). The ownership of change as a basis for teachers' professional learning. In J. Calderhead (Ed.), *Teachers' Professional Learning*. London: The Falmer Press.
- Rudduck, J. (1989). Changing the world of the classroom by understanding it: A review of some aspects of the work of Lawrence Stenhouse. *Journal of Curriculum and Supervision*, 4(1), 35-49.

- Rudduck, J. (1991). *Innovation and Change*. Philadelphia: Open University Press.
- Rundall, C. (1988). *A Developmental review of St Clares* (mimeograph) . Brisbane, QLD: Brisbane Catholic Education.
- Russell, T. (1988). From pre-service teacher education to first year of teaching: A study of theory and practice. In J. Calderhead (Ed.), *Teachers' Professional Learning* (86-98). London: The Falmer Press.
- Russell, T., Munby, H. (1991). Reframing: The role of experience in developing teachers' professional knowledge. In D. A. Schon (Ed.). *The reflection turn: Case studies in and on educational practice* (108-122). New York: Teachers College Press.
- Sachs, J., & Smith, R. (1988). Constructing teacher culture. *British Journal of Sociology of Education*, Vol, 9, 423-435.
- Sahin, C., Bullock, K., & Stables, A. (2002). Teachers' beliefs and practices in relation to their beliefs about questioning at Key Stage 2. *Educational Studies*, 28(4), 371-384.
- Samuelowicz, K., & Bain, J. (1992). Conceptions of teaching held by academic teachers. *Higher Education*, 24, 93-111.
- Samuleowicz, K., & Bain, J. (2001). Revisiting academic's beliefs about teaching and learning. *Higher Education*, 41, 299-325.
- Schommer, M. A. (1994). Synthesising epistemological belief research. Tentative understandings and provocative confusions. *Educational Psychology Review*, 6, 293-319.
- Schon, D. A. (1983). *The reflective practitioner*. New York: Basic Books.
- Schon, D. A. (1987). *Educating the reflective practitioner*. New York: Basic Books.
- Schrankler, W. (1976). Family groupings and the affective domain. *The Elementary School Journal*, 21, 43-49.
- Schroeder, R., & Nott, R. E. (1976). Multi-age grouping...It works! *Catalyst for Change*, 3,15-18.

- Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y.S. Lincoln (Eds.). *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Shavelson, R. J., & Stern, P. (1981). Research on Teachers' Pedagogical Thoughts, Judgements, Decisions, and Behaviour. *Review of Educational Research*, 51(4), 455-498.
- Shechtman, Z., & Or, A. (1996). Applying counselling methods to challenge teacher beliefs with regard to classroom diversity and mainstreaming: An empirical study. *Teaching and Teacher Education*, 12(2), 137-147.
- Shepard, L. (1991). Psychometricians beliefs about learning, *Educational Researcher*, 20 (7), 231-240.
- Shotter, J. (1997). The social construction of our 'inner' lives. *Journal of Constructivist Psychology*, 10(1), 7-24.
- Shulman, L. (1987). Knowledge and Teaching: Foundation of the new reform. *Harvard Educational Review*, 57 (1), 1-22.
- Shymanksy, J. A., Yore, L. D., & Good, R. (1991). Elementary school teachers' beliefs about and perception of elementary school science, science reading, science textbooks and supportive instructional factors. *Journal of Research in Science Teaching*, 28, 437-454.
- Silcock, P. (1994). The process of reflective teaching. *British Journal of Educational Studies*, 42 , 273-285.
- Skelton, A. (1990). Development sites: a gradualist approach to strategic redefinition. *British Journal of Sociology of Education*, 11 (4), 387-396.
- Smith, D., & Hatton, H. (February 1993). *Reflection across the professions*. Paper presented to the National Practicum Conference, Sydney.
- Smith, D., & Lovatt, T. (1991). *Curriculum: Action on Reflection*(2nd edition). Wentworth Falls, NSW: Social Science Press.
- Smith, J., & Heshusius, L. (1986). Closing down the *conversation*: The end of the qualitative – quantitative debate among educational inquirers. *Educational Researcher*, 1 (15), 186-201.

- Smith, L. M., Kleine, P. F., Prunty, J. P., & Dwyer, D. C. (1986). *Educational Innovators: Then and now*. New York: Falmer.
- Smith, M. L., & Shepard, L. A. (1988). Kindergarten readiness and retention: A qualitative study of teachers' beliefs and practices. *American Educational Research Journal*, 25, 307-333.
- Smyth, J. (1989). A critical pedagogy of classroom practice. *Journal of Curriculum Studies*, 21, 483-502.
- Somers, J. (1982). Multi-age: Back to the rural school. *Unicorn*, 8, 387-390.
- Sparkes, A. (1991). The culture of teaching, Critical reflection and change: Possibilities and problems. *Educational Management and Administration*, 19(1), 4-19.
- Stake, R.E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Stenhouse, L. (1983). Case study and case records: Towards a contemporary history of education. *Perspectives on case study: the quasi-historical approach (pp.85-98)* Victoria: Deakin University.
- Stipek, D. J., Givvin, K. B., Salmon, J., & MacGyvers, V. L. (2001). Teachers' beliefs and practices related to mathematics instruction. *Teaching and Teacher Education*, 17(2), 213-226.
- Stone, S. (1996). *Creating the multi-age classroom*. Glenview, IL: Good Year Books.
- Tabachnick, B. R., & Zeichner, K. (1991). *Issues and practices in inquiry-oriented teacher education*. London: The Falmer Press.
- Taylor, S.J., & Bogdan, R. (1998). *Introduction to qualitative research methods: A guidebook and resource (3rd ed.)*. New York: Wiley.
- Thompson, A. (1984). The relationship of teachers' conceptions of mathematics and mathematics teaching to instructional practice. *Educational Studies in Mathematics*, 15, 105-127.
- Thompson, A. (1992). Teachers' beliefs and conceptions: A synthesis of research. In D. A. Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 127-146). New York: Macmillan.
- Tillema, H. H. (1995). Changing the professional knowledge and beliefs of teachers: A training study. *Learning and Instruction*, 5(4), 291-318

- Tom, A. R., & Valli, L. (1990). Professional knowledge for teachers. In W. R. Houston (Ed.), *Handbook of Research on Teacher Education* (pp. 373-392). New York: Macmillan.
- Triandis, H. (1989). The self and social behaviour in differing cultural contexts. *Psychological Review*, 96(3), 506-520.
- Valli, L. (1990). Moral approaches to reflective practice (pp. 39-56). In R. Clift, W. R. Houston, & M. Pugach (Eds.). *Encouraging reflective practice in education*. New York: Teachers College Press.
- Van Manen, M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Inquiry*, 6, 205-228.
- Van Manen, M. (1991). Reflectivity and the pedagogical moment: The nomativity of pedagogical thinking and acting. *Journal of Curriculum Studies*, 23, 507-536.
- Van Zoest, L. R., Jones, G. A., & Thornton, A. (1994). Beliefs about mathematics teaching held by pre-service teachers involved in a first-grade mentorship program. *Mathematics Education Research Journal*, 6, 37-35.
- Veenman, S. (1995). Cognitive and non-cognitive effects of multigrade and multi-age classes: A best-evidence synthesis. *Review of Educational Research*, 65(4), 319-381.
- Veenman, S. (1996). Effects of multigrade and multi-age classes reconsidered. *Review of Educational Research*, 66, 323-340.
- Veenman, S., Voeten, M., & Lem. P. (1987). Classroom time and achievement in mixed-age classes. *Educational Studies*. 13, 75-89.
- Volkman, M. J., (1998). Creating professional identity: Dilemmas and metaphors of first-year chemistry teacher. *Science Education*, 82, 293-310
- Wagner, A. (1987). Knots in teachers' thinking. In J. Calderhead (Ed.). *Exploring teachers' thinking*. London: Cassell.
- Walker, R. (1985). On the uses of fiction in educational research. In L. Bartlett, S. Kemmis & G. Gillard (Eds.). *Perspectives on case study: Story telling* (pp.48-59). Geelong, VIC: Deakin University Press.

- Webb, K., & Blond, J. (1995). Teacher knowledge: The relationship between caring and knowing. *Teaching and Teacher Education*, 11, 611- 625.
- Weinstein, C. S. (1990). Prospective elementary teachers' beliefs about teaching: Implications for teacher education. *Teaching and Teacher Education*, 6, 279-290.
- Wellington, T. (1996). Orientations to reflective practice. *Educational Research*, 38, 307-316.
- Wilson, S. M. (1990). The secret garden of teacher education. *Phi Delta Kappan*, 72, 204-209.
- Wilson, S. M., & Wineburg, S. S. (1988). Peering at history through different lenses: The role of disciplinary perspectives in teaching history. *Teachers College Record*, 89 (4), 524-539.
- Wiltshire, K., McMeniman, M., & Tohlhurst, T. (1994). *Shaping the future*. Brisbane: Government Printers.
- Winitzky, N., Kauchak., & Kelly, M. (1994). Measuring teachers' structural knowledge. *Teaching and Teacher Education*, 10, 125-139.
- Wubbles, T., & Korthagen, F. A. (1990). The effects of a pre-service teacher education program for the preparation of reflective teachers. *Journal of Education for Teaching*, 16, 29-44.
- Yerrick, R., Parke, H., & Nugent, J. (1997). Struggling to promote deeply rooted change: The 'filtering effect' of teachers' beliefs on understanding transformational views of teaching science. *Science Education*, 81(2), 147-159.
- Yin. R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.
- Zeichner, K. M. & Liston, D. (1987). Teaching student teachers to reflect. *Harvard Educational Review*, 57(1), 23-48.
- Zeichner, K. M., Tabachnick J., & Densmore, K. (1987). Individual, institutional and cultural influences on the development of teachers' craft knowledge. In J. Calderhead (Ed.), *Exploring teachers' thinking* (pp.82-91). London: Cassell.

JENNY

INTRODUCTION

Jenny came to St Clares at the beginning of 1988 as one of its foundation members. She brought with her nine years of teaching experience, all of it centered on the five to eight year age group. Jenny had been nominated by the Education Officer for School Development in her region as one who could provide valuable insights and experience for a multi-age framework. This recommendation was based on his experience of seeing Jenny attempting to break down the distinction between the three year levels in her “composite class” and establish a non-graded setting that responded to the needs of the individual student. Jenny’s first group in 1988 consisted of twenty seven children in their first three years of schooling, however it was also at this stage that she expressed the intention of eventually having a group spread across the seven years of formal schooling. At the time of this study six years later Jenny had achieved this aim and had a group of twenty nine students ranging in age from five to twelve.

Jenny’s story proved to be unique among the seven teachers who participated in this study as she had well established belief system that enabled her to approach a multi-age setting with confidence and therefore there were few changes in her orientation during this study. The following table highlights the consistency within her orientation over this period. As she was to acknowledge, this belief system had been refined through several critical incidents within her own life that had caused her to question several of her unexamined assumptions about relationships, the individual, the nature of school knowledge and teaching and learning. It was Jenny’s beliefs about her sense of self, the ongoing desire to improve through reflection, socially constructed knowledge and self in relationships that proved to be a dominant strand within her belief system. These beliefs in turn influenced how she approached teaching, learning and assessment in her multi-age class.

BELIEFS	EARLY 1993	LATE 1994
Self	strong sense of self 'I' central to self acceptance of self essential images: seeker of knowledge, humanness	strong sense of self 'I' central to self acceptance of self essential images: seeker of knowledge, humanness
Relationships	central to life, catering for the whole person, accepting individuals for their uniqueness, relationships as networks	central to life, catering for the whole person, accepting individuals for their uniqueness, relationships as networks
Society and social justice	school and society reflect each other, schools help in overcoming social inequalities, respecting the individual	school and society reflect each other, schools help in overcoming social inequalities, respecting the individual
Knowledge	knowledge is socially constructed, knowledge is problematic, prior knowledge important, images: knowledge is an endless divergent path, is a seamless web	knowledge is socially constructed, knowledge is problematic, prior knowledge important, images: knowledge is an endless divergent path, is a seamless web
Change	Internal locus of control, ongoing desire to improve, self-reflection essential, reflection on relationships essential, reflection linking internal with external	Internal locus of control, ongoing desire to improve, self-reflection essential, reflection on relationships essential, reflection linking internal with external
Teaching	Interrelated with learning, teacher as mentor and facilitator, supporting learners' activities, modeling strategies, supporting reflection	Interrelated with learning, teacher as mentor and facilitator, supporting learners' activities, modeling strategies, supporting reflection
L Learning and learners	social, interactive and co-constructive, self- evaluating, high level of learner activity, image: learning essential as breathing	Social, interactive and co-constructive, self- evaluating, high level of learner activity, image: learning essential as breathing
Assessment	Negotiated, student referenced, peer assessment, based on developing mutual trust, diagnostic	Negotiated, student referenced, peer assessment, based on mutual trust, diagnostic
Curriculum	Integrated, content, processes, skills and attitudes, image: classroom of life	Integrated, content, processes, skills and attitudes, image: classroom of life

BELIEFS ABOUT RELATIONSHIPS

As will be seen, it was Jenny's beliefs about her sense of self, the individual and relationships that proved to be a dominant strand within her belief system and the base from which she critically reflected on her other beliefs about knowledge, teaching and learning. Jenny acknowledged she was not challenged by the organizational aspects of multi-age, but was by the task of making sense of relationships. As became evident from her story, Jenny regarded relationships as central to how she made sense of life. This became clear as she reflected on her personal biography and how it had shaped her beliefs about her sense of self and self in relationships:

Jenny: Being locked into having syllabus and curriculum and all that sort of rubbish did not provide any major dilemmas for me. My main fear is any thing to do with relationships at that stage...my background with relationships was my major setback and that was my major trouble.

Phil: That is interesting as the major problem teachers have coming into the system seems to be with the syllabus, curriculum and structures.

Jenny: Yes you have also got to see what background they have brought in. I suppose if you have been torn through relationships in your personal life as I have, then nothing is more valuable than relationships in real life. When you think in life nothing is more richer than a good relationship (Interview 18-9-93).

Jenny revealed that the challenges and dilemmas she confronted in her own history highlighted not only the beliefs she held about self and self in relationship but also how reflection on these beliefs could, at times, act as a catalyst for her to change other important beliefs she held.

THE RADICAL

Jenny observed that from her time at teachers college she was regarded as a “radical” because she attempted to push the boundaries of what was expected from a pre-service student. From these early days it seems Jenny’s sense of self was intertwined with the belief that learning involved personal understanding and the students could contribute to knowledge construction rather than being recipients or “vessels” of knowledge:

Jenny: From pre-service I was labelled radical at that stage, but I do not think I was. I was not able to get into the mood of what they were expecting from a teachers’ college graduate and I suppose it was the sort of freedom to let the kids know they had the freedom to learn rather than just sit there and be little vessels, but I had to hold on under strain.

Phil: For accreditation purposes?

Jenny: Well I was determined I was not going to fail. The words were, "I am not going to sign your certificate Missie, I am not going to sign your certificate." That is a true story. I played the role for that time to get my accreditation and after that...well. (Interview 28-3-93)

The image of a radical followed Jenny into her first school where she spent three years. Reflecting on this time Jenny stated it was an enjoyable experience because she could start to pursue some of the beliefs she held about teaching and learning in the practical setting of the classroom:

Jenny: So after the first three years of teaching I enjoyed it, not in the traditional way with kids sitting in a row. Even then way back in my first school, the principal said I was a radical, but at least she gave me the scope to experiment with certain things, so I sort of had a supportive principal. (Interview 28-3-93).

THE SIGNIFICANCE OF RELATIONSHIPS

At the end of the first three years of teaching, dramatic changes started to take place in Jenny's life with the relationships she developed, including marriage, having children and returning to full time study. These significant events in her life were to prove valuable learning experiences as she used them to reflect on the beliefs she held about herself and self in relationships with significant others, including her children and university lecturers. Also, as she noted earlier, the trauma of being torn through relationships heightened her awareness of the importance of relationships, a belief that will become increasingly obvious as her story unfolds:

Jenny: Then I had the bad mistake of getting married and after that things wild and wooly went on, you know I sort of saw the other side of society well and truly. Then I had my own family. I did not know what to do. I really had no idea what kids did. I thought they were just nice smelly little babies and that was another experience. Knowing what the kids needed, how to cope with the

screaming, so I started looking at what kids really need, rather than what you think they need. What the kids need the neighbours can tell you that, but if you find out what they really need they shut up. Then I went back to study and that was a turning point. I thought right I can let go now.

Phil: You did not feel constrained?

Jenny: No here I was in control of my life. I could not give a stuff about what anybody thought of me, the person me. If they wanted to call me radical so be it, but so far as I was concerned I might have been twenty steps in front or behind. All I wanted to do throughout the bachelors course was to find out more.

Phil: There was a need for you at that time?

Jenny: Oh yes! I did it in one year full time study. I found you could talk to a lot of the lecturers and I suppose pick their brains. It was a sharing thing but also wanting them to look at themselves too, getting them to question what the hell are they doing here. So anything they said I was not going to take as gospel, so it was just give and take. I really enjoyed that, so I thought right if I can do that with adults here I can do it with kids (Interview 26-3-93).

What is revealed in Jenny's observation is that she was becoming increasingly aware of the importance of being able to discern the needs of the individual, including her own, so that these could be responded to in a meaningful way. It seems at this stage that a particular need for Jenny was to continue to seek knowledge in a learning environment of a university where she could test and consensually validate knowledge claims held by herself and others. This need and the manner in which she responded sheds some insights into the belief positions she held about her sense of self, the nature of power relationships in learning and the kind of knowledge that was important. It is a cautious assumption at this stage that she believed teaching was a joint activity where learning is self-evaluating and knowledge is both tentative and problematic.

A CRITICAL RELATIONSHIP.

However, the opportunity to put these beliefs and the possible orientation they reflected into practice soon presented itself when Jenny returned to full time teaching. Once again it

seems that a significant relationship was to prove an important catalyst for Jenny to not only reflect on the beliefs that she already held but also to challenge her to change these beliefs. Jenny continues:

Jenny: When I went to school in the classroom I had special needs kids, Down Syndrome kids. They were kids with virtually half brains and it was the early stages of integration when they wanted to know whether children with special needs could be integrated in the classroom and it was up to me, as a teacher, to see whether or not I would take them on. When I went up to actually look at these kids I did not know what I was expecting. I thought right is this kid going to have two heads or what? I was as nervous as a kitten in water. I suppose my theory is everybody deserves a fair go, everybody is here to learn and I am not going to be the one that says no I am not going to accept this child. Will I have interfered with her right of life?

Phil: The right of the individual?

Jenny: Oh yes and this kid was eight and education had actually said no, she is beyond being at the integration stage. I thought if anybody says no, I will prove a way that it can be done, because as far as I could see back then, it was these people who have no rights. These people could not see ahead nor could they look back and see the mistakes of the past. Well even in my day the teachers used to call these kids dunces and put the poor kids in the corner with hats and things like that. Anyway so I thought there is nothing wrong with this kid, she is as stubborn as what I am. She became a class member first and it was not until that point that I had to start thinking, what am I doing here with this kid? I really thought I am letting her take control but I was not. I was still wanting this kid to get up to some sort of expectation, up to my expectation and I was bashing my head against a brick wall, so I had to step back and think what can this kid do, what would she like to do?

Phil: Was it a case of what she can do rather than what she can't do?

Jenny: Yes at that time she was a little girl that even education said was useless, you cannot teach, you cannot educate and yet that little girl educated me, educated the kids and to this day I thank that little girl. She turned me inwards, she made me look into myself, to see what is my role here, what do I want out of life through the career I have chosen and I thank her for making me keep my

eyes open. She was actually the one that started me with this knowledge, with an attitude. She had knowledge, different knowledge, and her knowledge was just as authentic as mine and her needs were completely different to what my needs were and what I thought what her needs were. Even if you liken it to the baby stages. What I thought they needed was different to what they got at that stage.

Phil: That was a while ago then?

Jenny: Yes that was back in 1983-1984. I owe so much to her. She is dead now (Interview 23-3-93)

It seems that this relationship had a significant impact on Jenny and challenged her to reassess her assumptions about the way she understood the individual, their needs and what knowledge was important and worthwhile. Jenny further revealed why this relationship was a critical one for her and where the locus of control for change was centered:

Phil: Going back to that little girl Jenny, you could put that little girl with some other teacher's classroom and they would not have reacted in the same way you did?

Jenny: No, I believe that is where fate came into it. It might have been at that point of time I needed a good kick in the bum to have a look at myself. That is I was sitting back enjoying it and not looking further.

Phil: So your practice had not really been a problem until your routine was disrupted?

Jenny: Yes routine. There was something missing, you know when there is something wrong in your marriage, you know there is something not right. You cannot pinpoint it. It was not until this that made me realise I was not practicing what I was preaching.

Phil: Catering for the individual?

Jenny: Yes I had been catering for the individual but it was academic, rather than catering for the whole child and really accepting that kid for what they were not for what I was wanting them to become...I had to change, not her. We are the ones that have to change our attitudes to what we see as normal. Who is to say what is normal; maybe the abnormal is normal and the more sophisticated

we become the more abnormal we really become. That is really why if you can get into the kids and be with the kids and not change them, let them change themselves if they wish. That is an attitude. It sort of knocks you when you have to re-assess everything you are doing (Interview 23-3-93).

A SHIFT IN BELIEF ABOUT THE INDIVIDUAL AND SOCIAL RELATIONS.

Jenny found this relationship confronting because it caused her to reconsider her belief about the nature of the person from one which was atomistic and fragmented to one which understood the individual as being an integrated whole. Thus the emphasis on catering for the academic needs of the individual appears to have become a far less significant factor than previously and now was one of the several ingredients that needed to be considered when responding to the whole person in the classroom. Jenny once again acknowledged that the dynamics of power also needed to be considered so as relationships did not become dominated by the one who had authority. It also seems that she was beginning to highlight how social relations may be socially constructed and should not be taken for granted, particularly when categorising who was “normal” within the educational system. Her belief that change should become something that was internally generated rather than imposed externally also provides some insights into her own reflexive beliefs about the origin of change.

It can be inferred from Jenny’s belief statements so far that change involved critically examining the basis for her own beliefs and the particular meanings that they hold for how she was to interact with others. It seems then that by the time Jenny had arrived at St Clares her belief system had undergone some change but was still subject to continual scrutiny from within. From Jenny’s observations and comments it appears that her belief about self, relationships and the individual would continue to be a major strand within her own web of beliefs and the possible basis for further critical reflection on the beliefs she held about what constitutes worthwhile knowledge, teaching and learning. Indeed it was this belief system (orientation) that enabled Jenny to operate within a multi-age culture without presenting any major dilemmas or clash of beliefs. However it will also be of

interest to examine why this was so and to confirm the nature of the belief orientation(s) that Jenny espoused and demonstrated in the practical setting of the classroom.

THE INDIVIDUAL IN THE MULTI-AGE CLASSROOM

Jenny expressed to administration early in her time at St Clares that she wished to have a group of students whose ages spanned as much as possible of the age range within a primary school (five to twelve). Jenny's class at the time of this study was unique within the school because it was the only group that had students ranging across the seven years of formal primary schooling. Working with such a grouping had been Jenny's intention from her first year within the school. The challenge of catering for such a wide range of grade levels did not appear to phase her as much as it often did for others who visited her class. Jenny's response to a question from two visiting teachers who were interested in finding out how she "coped" with such a grouping sheds some light on her belief about a multi-age class:

Jenny: I don't teach year one to seven. What I have is twenty eight individuals (Conversation 2-6-94).

Jenny's response highlights how she believed the students should be considered as individuals in their own right, rather than be labeled with the traditional grade levels that conventionally trained primary teachers often use. This recognition of the preeminence of the individual over bureaucratic imperatives appears to be emerging as a recurring theme within Jenny's belief system, providing a further possible insight into her beliefs about the individual and her relationship with others in a social setting.

BELIEF ABOUT RELATIONSHIPS.

What actually constituted these beliefs and how they were demonstrated within the multi-age classroom emerged as Jenny spoke about relationships and how they were fundamental to the way she understood her own sense of self, the students and their perceived needs and the development of community. The following statement was in response to the question put to Jenny about what she considered as being the essential elements of her beliefs about relationships:

Jenny: Relationships. It is people networks. Networks of helping with happiness, helping the process of things, the whole network of people, even if it's a unit of two, twenty two or two hundred and twenty two, there's a relationship between them, an understanding of the process of awakening to the other person as well as yourself.

Phil: And where do you see the individual fitting in, the "I."

Jenny: The "I" is important because if you haven't got a belief in self you wouldn't be able to add anything or be critical of anything that might be pulling apart the community. You might have a community that might be, how could you put it? If you have got people that are sort of suppressed then they are not thinking of the "I" and if you have got a good image of the self, that goodness will come out (Interview 18-10-93).

In her belief statement Jenny has highlighted the importance of not only developing a mutually supportive relationship but also of recognising the significance of maintaining a strong sense of self so as to be able to be able to challenge the parameters of conventional thought which may suppress individuals within a community. The notion of the self and the positive image that Jenny associated with it also emerged in a further response she made when explaining what she believed constituted relationships:

Jenny: ..honesty, especially to self first; learn about own qualities and accept and be honest about own faults - LIKE SELF FIRST and then accept others'

differences. Relationships are about deepening your self realisation and therefore others help you to learn about humanness (Written response 4-10-93).

THE IMAGE OF HUMANESS.

What is also emerging, in conjunction with her beliefs about relationships, is the notion of self and the importance of adopting a reflexive approach to social relations so as she can become aware of “humanness”, an image explained by Jenny in the following response:

Jenny: Humanness - a sense of belonging

- a sense of being needed through relationships*
- a sense of adventure/doing/exploring/creating*
- a need for quiet inner reflection*
- a strong need to communicate*
- a sense of identity (Written response 23-5-94).*

BELIEFS ABOUT CHANGE AND THE ROLE OF REFLECTION.

For Jenny, the centrality of reflection and her ongoing desire to improve, led her to question her personal belief about the individual and the significance of the relationships she developed with the students. It also prompted her query, as the critical incident with the Downs Syndrome student illustrated, the criteria that were used to determine which knowledge was important for individuals to learn and the benchmarks for deciding who was successful within schools. This approach to change and reflection suggests a high priority for ensuring that individual students' needs and welfare are met rather than focusing on the integrity of content domains. There is also a hint of an emphasis on a more 'even' distribution of power relationships in the classroom. The importance of seeing life as an ever evolving phenomenon that needs to be approach reflexively is contained in Jenny's image of 'the time traveler.'

Phil: What was the metaphor you were using earlier this week?

Jenny: About time traveler and the time warp?

Phil: Yes what did you mean by that?

Jenny: Well what do I see myself as. Well I thought right I could be this or I could be that and last night when I was actually in a quiet mood, I felt I was a time traveler. I thought all of us, all men are time travelers and some time you get some people who are caught in a time warp.

Phil: And they start talking about the good old days?

Jenny: Yes everybody has to feel comfortable and it is that comfortableness that I do not want to get caught in. I do not want to get caught in a time warp where I will feel comfortable... my time traveler builds a vast store of energy and knowledge and I am wanting to move on as quickly as possible (Interview 16-7-93)

It is clear from Jenny's belief statements that her beliefs about reflection and the constant need to improve how she relates with others are interconnected. This becomes evident when Jenny confronted dilemmas within her multi-age classroom:

Phil: If you have got a dilemma in the family grouping set up, how do you resolve it. Is it reflection that is going on?

Jenny: I suppose basically it is reflection. It is not so much reflection on what is there, it is what I have missed. It is self reflection rather than reflection on a practice.

Phil: You mentioned the other day how you reflected on relationships at the end of the day.

Jenny: Yes that is what I am saying a lot of. I suppose with this term reflective practice, I am sort of, I am not happy with that term, because it is basically you are working from a role.

Phil: A practitioner?

Jenny: Yes and when you are looking at reflective practice you are reflecting on the practice of what? So therefore from my point of view, I don't want to be in that role of a practitioner. I would rather see it as reflecting on myself, reflecting on bridges I have still got to build in the class, with individuals... where I have got to deviate from, where I have got to go to. Rather than being a practice of how to set up the classroom or how to set up a group... that is practice. That practice is

not going to work because you are slipping in and out of roles. If you are not in a role when you walk into the classroom, then you are not looking at your practice, you are looking at yourself; it is just self-reflection.

Phil: So when you reflect you reflect on relationships?

Jenny: Yes, the relationships with the kids, with other teachers, yes communication and particularly what was not said. It is reflection on whether I felt like good person and if I helped someone to be worthwhile during the day. I suppose the basic humanness is the reflection (Interview 18-8-93).

Jenny, in a written response, also explained how reflection was important for discovering her own sense of self and the significance this could then have in relationships with others:

Phil: How do you attempt to resolve dilemmas you have?

Jenny: Acceptance of who you are - warts and all- leads to readily accepting others. Reflection on this then enables to share yourself with others and the dilemmas you have (Written response 8-8-94).

BELIEFS ABOUT THE MULTI-AGE CLASSROOM.

Jenny's beliefs about relationships and the process and content of change through reflection, appear to be compatible with a multi-age philosophy which stresses the importance of an ongoing and reflexive approach to nurturing individuals in a 'family' learning environment. Jenny's own description of the significant beliefs which constituted her understanding of a multi-age classroom appears to corroborate this assumption:

Phil: What beliefs characterise your multi-age classroom?

Jenny:

- *relationships between others*
- *understanding/tolerance/accepting individuality*
- *belonging- with this comes responsibility to learning about change and adapting to it*
- *sharing gift of self*
- *confidence in self, accepting strengths and weaknesses*

- *learning through watching and doing in a nurturing environment (Written response 16-5-93).*

Jenny elaborated these beliefs about the multi-age classroom in a later written response when she outlined the perceived benefits such a structure has over the traditional graded classroom:

Dynamics are vastly different. Communication between individuals is highlighted; learning to communicate - to really get your message across is different - as children have to adapt more often - older child to younger child who does not understand - the older child has to use different strategies and language and analyse the situation and rephrase ensuring the essence of the communication task gets across.

Children who may need help in a task readily approach others.

Multi-age is a hive of communication activity, rather than task oriented outcomes found in a traditional classroom.

Patience, tolerance, co-operation and actively taking charge of their learning is obvious.

Children are more natural as they are becoming who they are rather than what the 'average' dictates.

Multi-age is not dictated by the syllabus that every child (who is average) should have by end of a given time.

Multi-age is where the individual learns 'what they don't know and need to know' over many 'grade syllabuses' during their 'primary school years.' I wish it could be secondary as well (Written response 8-8-94).

What Jenny had to say about her classroom was consistent with her above claims. For example, when Jenny was asked to describe the cognitive, affective and social learning factors associated with the multi-age or family grouped classroom her response reiterated earlier expressed beliefs about the integral nature of the individual and the necessity for creating a learning environment which nurtured and respected this integrity as expressed through the image of "humanness":

Jenny: To isolate would be to compartmentalise. ALL THREE ARE TOTALLY INTERRELATED and totally dependent upon each other to nurture humanness. Family groupings - a path towards bringing human qualities to the fore within the clinical schooling forum - rounding/wholeness of the individual rather than fragmenting (Written response 23-5-94).

Jenny provided further insights into how she perceived the nature of the multi-age classroom when she was asked whether having a wide range of ages in her class presented problems, particularly when a common concern expressed by teachers is that students need their age peers:

Jenny: But peers to what? Your might be my peer, but you are ten years older. You mean chronologically?

Phil: Yes.

Jenny: I just think, well my best friend is my mother. Your peers are the people you look up to and respect and the ones you socialise and communicate with. Why have an age barrier? That is another structure. Teachers who want age graded structures want conformity and order. Throw them into disarray and then they will find the meaning. It is in the kids not in the structures... people want order. They want to put kids in little boxes and then put them back on the shelves. I suppose the grouping in this room actually gets the kids to look at the characteristics of people and what binds them together as individuals. Life is basically not ordered. It is how you order that gives you the richness on life. Each individual ordering is going to be based on that person's needs (Interview 18-8-93).

THE SOCIAL RESPONSIBILITY ASSOCIATED WITH BELIEFS ABOUT RELATIONSHIPS.

Jenny's image of the classroom where everyone was to be valued as an individual, difference respected, and no one, including herself, would aspire towards control over the learning process was evidenced in a practical way during visits to her classroom. One typical case was with Nicholas who moved into Jenny's class in 1989. He had come from the pre-school where he was labeled by the teacher and learning-support teacher as a

child with severe social and emotional problems. Subsequent psychological testing and ascertainment had placed him in the intellectually impaired category. Jenny was approached at the end of 1989 to determine whether she was prepared to take Jason into her classroom. Jenny's response was immediate and she expressed a keen desire to have Nicholas in her group. Six years later he was still a member of the class at both his own request and his parents. Several incidents involving Nicholas provide some insights into how Jenny saw him as a member of the group:

In March 1993 a teacher aide was funded to assist Nicholas in the classroom for eight hours a week. When I was negotiating with Jenny as to what she wished the teacher aide to do with Nicholas, she expressed the strong need for her to establish a friendly relationship with him first. Within the first hour Jenny stated that she did not want the teacher aide to continue as, "She is comparing him to the other students in the classroom by saying that this is terrible, how can anyone be backward at his age. If she cannot accept Nicholas for what he can do rather than for what he can't do then I don't want her." As a result the teacher aide was reassigned to another student and a second aide appointed (Observation 3-3-93)

Jenny was also able to relate how she saw Nicholas develop over the six years in a learning environment that she hoped was consistent with her beliefs about the individual in a tolerant and nurturing social setting:

Jenny: I suppose the most pleasing thing about Nicholas is that he has developed his own little friendship group within the class and that they have accepted him for himself. I hope it is a reflection of how this class works. I think it is the way that he is now prepared to take the consequences for what he does and to own his behaviour, that is real learning experience for him. My God it hasn't been easy. I think it has been made easier though because I have been able to accept Nicholas for what he is, warts and all. I think the fact that he was able to come back this year and know that he would be turning twelve is a big step (Conversation 15-4-94).

On another occasion Jenny commented that:

Jenny: It is really good to see how Nicholas is accepted as a member of the class. Watching him at morning talk the other day when he brought in this electric motor with a propeller that he had put together and kids taking a genuine interest, it was really pleasing. Here was Jason teaching all of us something and I thought it was really satisfying that he had the freedom to do that (Conversation 3-5-94).

Jenny's approach to Nicholas confirms her belief about the unique and integral nature of the individual she expressed earlier, resulting in part from reflections on the relationship she developed with the Downs Syndrome student. The social responsibility that this orientation held for Jenny was also manifested through the kind of society she would like to see develop and the social justice belief underpinning it:

Phil: What kind of society would you like to see develop?

Jenny: I would really like to see a society which is tolerant and shows responsibility towards others. My God it is not happening now, you look at the greed and selfishness that is all around us. Look at the environmental vandalism that is taking place. It was really interesting last week when we were talking about that quote from Starwars that we have been watching with our space unit. What is it again, "Don't let hate overtake you or you will enter the darkside." The kids could tell me about Rawanda and how lack of respect for others caused that. I really hope our kids learn from it or we are finished. I really mean it (Conversation 20-7-94).

BELIEFS ABOUT SOCIETY AND SOCIAL JUSTICE.

The notion of a tolerant classroom as a microcosm of the kind of society Jenny envisaged was also reflected in her belief about social justice, a concept she saw as recognising the uniqueness of others as well as self:

Jenny: Social justice is a term that has arisen because of the inability to accept others for what they are, which stems from the inability to accept self (Workshop response 3-10-93).

And again in an interview:

Jenny: Is there really a social justice system for us anyway? Even the idea of social justice has been changing over the generations. Now I think what is coming through is the human. I do not see it as social justice. I see it more as a human respect, respecting others' rights and needs (Interview 14-6-93).

Jenny expressed the importance of social justice for her when she was asked to outline what her professional development needs might be for the following year:

Jenny: How do I know? - I am not a soothsayer who can predict what direction education will be heading into - however with the Wiltshire Implementation - probably researching ways to bring about social justice. To continue to critique and analyse trends in education and to continue to find a way to enable the suppressed individuals within our profession to finally be able to stand up and say "We are professionals - we want social justice - learn from the past mistakes where we have denied teachers and students the right to develop as individuals in an ever changing world. Don't relive the past (Written response 8-8-94).

BELIEFS ABOUT THE INDIVIDUAL IN SOCIETY

The beliefs Jenny expressed about society, the individual and self in relationships with others seem to be consistent with an orientation in which there is a active desire for a qualitatively better life for all through the construction of a society based on non-exploitative relations and social justice. Consistent with this orientation Jenny also started to question the concept of schooling as opposed to the broader and more inclusive notion of education. Within this orientation school and society are seen as reflecting one another and school may help in overcoming social inequalities by questioning the social structures

that reward individualism, self-interest and narrow interpretations of whose knowledge is important:

Phil: One of the questions that you brought up before is that when you start to question the purpose of schooling that indicates a real change.

Jenny: Yes, but schools in particular have not wanted questioners, they have wanted conformists. With the big major questions like "Why schools?" well that makes you sit back and look at the historical part. I think that is the question now that needs to break through... we are not going to conform. Conformists are like lambs to the slaughter. Conformists are the ones who are leading our environment to the slaughter. We need people now to ask why and put their beliefs forward. Schooling has not really done that in the past because historically it is the conformists who have contributed to the silence.

Phil: Well how do you help people when they come to you with questions about multi-age or any other questions about schooling?

Jenny: I don't help in that way. I throw more questions at them. I suppose I find that difficult, people expecting answers. You cannot give people an answer. I really believe that you have to live that experience and to seek and search for the answer and it is not so much the answer, that is the end part. It is all the things that did not fit along the way. They are the most important parts (Interview 14-6-93).

From Jenny's story so far it would appear that she did not intend becoming a "conformist", as this would be inconsistent with her belief that there should be ongoing critique of a system that seem to classify and label individuals and their knowledge on limited criteria.

KNOWLEDGE BELIEFS

As Jenny started to question the social function of knowledge and in particular whose knowledge was important, an insight was gained into her epistemological beliefs. It appears these beliefs, consistent with her other relational and change beliefs, emerge from an approach based on the understanding that any knowledge is socially constructed. This means that the world people live in is constructed symbolically by the mind through

social interaction with others and is heavily dependent on culture, context, custom and historical specificity. These beliefs lead to questions about the social functions of knowledge and how some forms of knowledge have more power than others. Jenny's beliefs also reflect an orientation that values building knowledge and understanding by linking to what is already known and to engage in, and reflect on, learning opportunities created through the application of the teacher's professional expertise and practical experience. Such an approach also aims at challenging the individuals own knowledge and understanding and to respond to and share in the challenges of others. For Jenny knowledge was a concept that extended beyond the narrow understanding of being relatively stable and external to the learner. Jenny provided some insight into the significance of knowledge within her own journey when she responded to the following:

Phil: How has your knowledge been reconstructed?

Jenny: Since the last time I spoke to you, my knowledge has been reconstructed a hundred times over. I am a doubting Thomas, let me put it that way.

Phil: So you are looking at knowledge as being problematic all the time?

Jenny: Yes but problematic to my search. If I come up against something I do not know anything about I will take in as much on that subject as I can because I do not know when I will use it in the future (Interview 6-7-93).

It seems that through her image of the "doubting Thomas" Jenny believed knowledge was constructed and reconstructed continually through both personal reflection and social interaction. Jenny also articulated how belonging to a community was significant in developing a symbiotic relationship between herself and the community in acquiring knowledge. However as she was to stress, the community could not be a static one and therefore an essential criterion for her to belong was that the community had to be a reflexive one:

Jenny: Yes well belonging. I don't sort of believe that you can actually belong to a community for the rest of your life because you're moving, you're on journey and moving. You can take what you can from the community. You give what you can to that community for that moment in time. When nothing more...it's give and

take thing...and yet if a community is static they're not going to go past what's been taught, because they're not... they won't ever be a change agent and they're not willing or game enough to look beyond or question themselves and to question the people around them... question all the things around them (Interview 18-10-93).

THE SOCIAL PROCESS OF KNOWLEDGE CONSTRUCTION.

What seems to become apparent from Jenny's epistemological beliefs is that she understands the construction of knowledge to be a social process and inextricably linked with her beliefs about relationships. This is further reflected in her definition of what constitutes knowledge:

Jenny: Knowledge is ever changing, an endless and divergent path, many roadways to take, many corridors to explore, many roads still to be made and laying dormant in people's minds, ready to enlighten others on their life journey (Workshop response 24-9-93)

When Jenny was asked whether she had difficulty in translating these beliefs into practice in her multi-age classroom, her response indicated there were no dilemmas and that the classroom was an environment where her interrelated beliefs about knowledge, learning and social relations could be enacted:

Jenny: No, because it is a social interaction...I suppose it is the social angle. Being a society we need to help each other. All the other kids who have been there and done that can actually help the those ones that have not. Even the little ones have got things that they can actually help the older ones with. It is all learning and taking something (Interview 4-3-94).

THE SPACE UNIT.

Jenny's belief in creating a learning community where students could contribute to knowledge within the community rather than be recipients of knowledge was evident in the way the class functioned. The unit on space is a typical example. The catalyst for the topic on space came from one of the students mentioning in their morning talk that scientists had found water on another planet and this was probably an indication there was a form of life on the planet. As Jenny noted this sparked a lot of interest in the topic and there were a number of requests that it be done as a whole group. This request was taken up by Jenny. The following is an observation of one particular session:

The group was in a circle on the floor, including Jenny. Jenny started the session by asking the group what they would like to find out about this planet. Various responses were given and these put on the board by one of the students. Jenny then led them to the conclusion that they had to get there first. Following on from this discussion it was decided by Jenny that they would form into buddy groups of five and decide on two things each they would take with them. This would require them to make good decisions and to negotiate with others. They then moved into their buddy groups, which contained a younger student and an older one. These were then combined into a group of four. Jenny asked that they select someone to report back to the whole group. After twenty minutes the whole group moved back together to report. Jenny later reflected on this session.

Jenny: Wasn't that good. Did you see big Jurie sitting there listening to little Angelica tell him that she wanted to take her pink elephant and her basket. I liked the way he rolled his eyes, well he did, but he didn't ridicule her little things. Then did you notice how she also wanted to take her mother and brother and then the others could only take one thing. As Clint said, we had to do that or she would have been crying the whole journey. It was good to see too that it was not the eldest in the group that did their presentation and that they picked someone who they thought had that particular skill. I am really pleased the way they listen and respect each others' ideas. The next activity we do will be for the whole group to decide five essential things they need as a group.

Phil: Will you be making use of any other resources?

Jenny: Well I have twenty seven little resources in this room. They will have to go and find the resources they need to get the information they need to answer the questions that they come up with (Conversation and observation 4-6-94).

Jenny utilised the groups that were established for many of the activities that were to follow with the space unit. It was noted that Jenny had prepared a book of activities for all the students containing research questions on various aspects of space. Topics included the inner and outer planets and general information about the solar system. When Jenny was asked whether all the students were expected to do this booklet she responded:

Jenny: Of course, why wouldn't they? They can all learn and contribute by working together. They don't need to be able to write down the answers but they can contribute in their own little way. You look at how Sean has taken off with this topic. It is the first thing I have really seen him interested in in three years. Now he is telling me he wants to be an astronomer. He is really coming up with some interesting information. The other day he was able to explain to the whole class why there is less gravity on Jupiter (Conversation 3-7-94).

THE USE OF THE SYLLABUS DOCUMENTS

The approach Jenny adopted with this unit reveals the difference that takes place when students are challenged to become part of a community of inquiry, rather than recipients of pre-packaged and graded syllabus knowledge. However this is not to imply that Jenny was dismissive of the syllabus documents. Rather for her they took on a broader meaning where they became a guide to the concepts, processes and skills to be considered when approaching a collaboratively determined content theme. As Jenny elaborates:

Phil: Do you think you are following the syllabus guidelines when you are doing this space unit?

Jenny: Of course I am. You look at all the skills and processes these kiddies are using in the space booklet. They have to be able to infer, generalise, hypothesise, it is going on all the time in their group work, in their research. I

think I have covered most of the topics in the scope and sequence chart in the space section of the science guidelines too. It is very difficult to isolate them all as they are all integrated in everything we do (Conversation 3-7-94).

THE INTEGRATED CURRICULUM-THE IMAGE OF THE CLASSROOM OF LIFE

Jenny's notion of an integrated curriculum as one in which she could blend the different subject areas by using the overlapping skills, concepts and attitudes common to these disciplines seems consistent with other belief statements she made about the nature of the individual as an integrated whole and how she made sense of the affective, cognitive and social aspects of a multi-age class. In her following statement Jenny also explains how she made meaning out of trying to cope with the demands of covering the many subject areas found within the primary curriculum. Her image of "the classroom of life" seems consistent with her earlier expressed beliefs about the nature of schooling versus education, the kind of knowledge that is considered important and her sense of self within the process of education:

Phil: Do you have any difficulty moving away from a subject-based approach to learning?

Jenny: I am on about education and no longer about schooling; I no longer see myself as a school teacher. The classroom is the big wide world, the classroom of life rather than being subjects. Well this is the way I am able to make sense out of all these disciplines (Interview 16-7-93).

AN APPROACH TO TEACHING AND LEARNING

Jenny's approach to teaching and learning seems to reflect an approach which attempts to engage both student and teacher in a process of learning that is self-regulating, reflective, interactive and co-constructive and which is analogous to the deep rather than surface approach to knowledge acquisition. Within this perspective, for example, learning appears to be both social and personal in that others are significant in helping to develop knowledge which is unique and important to the individual. Thus the separation of learner

and content is highly problematic. What is required, as Jenny stressed on several occasions, is a focus on creating a developmentally appropriate learning environment that challenges the student's emerging knowledge base. Thus the teacher's role is one of mentor or facilitator who organises learning opportunities to allow the student to take advantage of these opportunities and achieve autonomy. This role was acknowledged by Jenny for example when she noted that the process of teaching and learning were synonymous. Jenny also showed evidence of providing opportunities for learners to play roles that required them to be more reflective and aware of the process of expert performance. Peer tutoring, collaborative activities with other learners and playing the teacher's role, strategies Jenny called upon, provide the social contexts where learners are forced to be more conscious of the elements and processes of expertise.

The beliefs Jenny espoused did not appear to see teaching and learning as mutually exclusive but rather as an interactive process. The teaching/learning process as a result takes on a collaborative nature where both teacher and student are co-learners and where the student in particular has a role to play in decisions about the social processes of learning. Assessment provides a good example of her approach. Jenny had moved away from a competitive and comparative notion of assessment, to one which emphasises a diagnostic approach based on an open and trusting relationship. Integral to this approach is the importance of dialogue with the students as a basis for reflecting on how best to respond to the expressed and implicit needs of the individual.

STATEMENTS ABOUT TEACHING AND LEARNING

What seems to be emerging from Jenny's statements is that her beliefs about the nature of knowledge, self and relationships are interconnected with her beliefs about the way she approached teaching and learning. This belief entails a shift in emphasis from a hierarchical, directive and authoritative approach where the teacher imposes learning, to one where the teacher supports the construction of meaning. Jenny outlined her beliefs about teaching and learning when she responded to the following question:

Phil: What are the essential elements of teaching and learning?

Jenny: Learning is BREATHING (essential for being human); ongoing; diverse; spontaneous; reflection - plenty of that!!; sharing; challenging. TEACHING. Tied in with learning (Workshop response 4-10-93).

Jenny also explained how she enacted these beliefs about teaching and learning within her classroom when she responded to the following question:

Phil: How do you cater for the learning needs of the students?

Jenny: What learning needs are you talking about? It is just from being in the room with them. It comes from listening to their morning talks, they tell me, it is from the interactions during the day, from everything. Do you want me to document it?

Phil: No, not really, but I have noticed how much you work with individuals on a one to one basis a lot during the day.

Jenny: Well I do. When I am doing that I am working through their maths contracts, their homework, their language contracts. I talk through what I have written to them. I suppose it is the time I can try and establish the personal. (Conversation 30-5-94).

BELIEFS ABOUT LEARNING IN ACTION

The emphasis the Jenny has placed on the interpersonal and social nature of the learning process was evident in her classroom practice. One strategy that she employed was the “prepared topic” or morning talk where each student was rostered to present information they had gathered on a self-selected area of interest. Jenny continues:

Jenny: The morning talk is one way I saw of providing the kids with the opportunity to take control of their own learning. I am not telling them what they have to find out about, they have to do that, relying on their own little initiative.

Phil: But don't they have some kind of structure they have to follow?

Jenny: Yes well I have given them the basic research outline, select a topic, find the resources, select and underline the key words. You can see that in their

prepared topic book that they give to me after having presented it...Here you are throwing the responsibility back on the individual and it does not put a limit on what they could do. As well as researching there is also the oral component, they have to stand up in front of the group and present it in the way they think best (Conversation 8-5-94).

A visit to the classroom during one of these prepared topic sessions provided the following observations:

The group had gathered in a circle on the floor. Jenny was also part of the circle and had with her observation books for the five students talking on this day. The first one to speak was Ganina on the topic of pandas. She covered various aspects including the description of their habitat, life cycle, eating habits and why they were an endangered species. After she had finished talking, time was made available for questions. One question was asked about whether they had ever lived in Australia. Ganina responded that she did not know. Jenny then asked the group what being an endangered species meant. Aaron responded that there were only a few left. A brief discussion then took place about other endangered species. Jenny asked what Australian animals were in danger of dying out. Joshua answered that the koala was an endangered species. Jenny asked why this was so. He responded that it was because all the trees were being chopped down. Jenny then suggested that maybe someone would like to investigate this problem further. Several students expressed an interest in doing so. The next speaker was Jermaine who stood up and held up a pair of clogs and looked around the room. As nothing was said, one of the students asked what they were. A single response of, "clogs" was given. Jenny then asked Jermaine to answer in a sentence. After having done this Jenny then lead him through a series of questions about where they came from and how he came to have them (Observation 4-5-94).

After the session Jenny provided further insights into how she interpreted what had occurred:

Jenny: I hope I didn't come across as being too hard on Jermaine. What I was trying to do was to get him to speak in sentences. As you most probably picked up he has difficulty with his sentence structure. I am always looking for opportunities for him to speak in sentences.

Phil: Do you expect him to follow the same format as the others with researching the topic?

Jenny: Yes, but not the written part at this stage. As he develops the skills to be able to do this I will.

Phil: Do you think this kind of arrangement is a valuable way of learning?

Jenny: Of course it is. You look at what they were exposed to this morning and the questions that were asked. I learnt things about the giant panda and the broad bean that I didn't know before. You take what you need (Conversation 4-5-84).

When Jenny was also questioned as to who was the arbiter of what was learnt in the classroom her response indicated that learning was interactive and co-constructive, consistent with her earlier statements about the social nature of knowledge acquisition:

Jenny: Who is the arbiter of what is learnt in the classroom? Well it is multi-faceted. It can be myself or it could be other members. It really works both ways, it all LEARNERS depends on where the need is (Conversation 15-5-94).

A COMMUNITY OF LEARNERS

A visit to Jenny's classroom revealed that she was indeed attempting to set up a community of learners where the needs both of the individual and the group could be catered for.

Jenny had established a language contract system. This required the students to tick various activities after they had completed them. Included were; silent reading, adult reading a book to me, read at home, read to other children, borrowed a library book, read to an adult, filled a diary entry, wrote a story. When working with individuals Jenny sat beside them and went through the work

they had done. This involved conferencing a story, hearing the spelling that had been selected from their own writing and checking and discussing the library book they were reading. During this time the rest of the students sat in self-selected groups working on the various language activities. It was also a time where students were free to move to the resource centre to work on their prepared topic or to research information they may need. The following comments that Jenny had written on one of these contracts gives some insight as to what was expected from one student.

Joel,

Your were careless with the spelling words again this week. The words I had to correct that you should have known were - new, said, every, soccer...during story writing this week I would like you to complete a book activity from the wall and see you get it done. Also Joel I would like to see you use more descriptive language in your writing. Instead of simply saying, "The boy" expand it by saying, "The tall boy in the blue shirt." This would make your stories more interesting (Observation 13-5-94).

Jenny also used the written comments to the students as a means of encouraging their learning efforts both in school and at home. Daniel was one student who experienced learning difficulties:

Daniel,

I don't think you filled in all the activities you actually did this week. Please ensure you do this next week.

I am pleased to see that you have attempted your story draft this week - I will work on this with you next week. I am looking forward to this. I know you find language difficult, but you are gaining more confidence in yourself when working with this area.

However I would like to see you reading more at home, as you read competently to me during the week. Take home books you feel comfortable reading and read every night. Keep up the good work.

Thank you.

(Observation 13-5-94).

RESPECTING THE LEARNING NEEDS OF THE INDIVIDUAL

Jenny was also to become quite vocal on several occasions when she considered that the learning needs and the developmental level of the individual student were not being respected, with possible unacceptable social consequences. One such incident emerged during an interview with Chris's mother. Chris, at the time of this interview, had been with Jenny for four years and had severe receptive and expressive language difficulties. Despite the best efforts of both Jenny and the learning support teacher to have him receive speech therapy, they were hampered by the negative response from the mother:

Chris's mother requested an interview as she was very concerned that, "Chris was learning nothing and was going backwards." She started by opening his homework book and saying that nothing was being done. Jenny explained that, "homework was not my responsibility, it is an extra. It is your responsibility." Jenny then went on to explain that, "she provides homework as the child needs it and it is in response to a problem. Chris's problem is phonological one and I give him homework accordingly."

Chris's mother then asked how it was possible for her to teach grades one to seven in the one room. Jenny responded, "I have twenty seven individuals and that is no different from any other family. It is just the same way you respond to your family situation."

Jenny responded actively to the statement that, "she was doing nothing for Chris in the class." It provoked the following response. "There is an agenda here that I want out in the open. You did not follow up on the speech therapy sessions that we organised. It is too late now, the horse has bolted. All we are trying to do now is catch up with his speech. You can't just look at one little area, this is a very complex picture. Chris can't decode the messages he is receiving orally. What is needed is that his self- esteem is maintained. If we undermine that he will become a behaviour problem"(Parent interview 28-7-93).

Chris was a student with whom Jenny spent considerable time in the classroom and often expressed her frustration to me that she did not feel supported from his home. It was evident on several visits to her classroom that Jenny had produced an individual education

program in conjunction with the learning support teacher which targeted his special needs. A significant component of this was aimed at his auditory processing skills and oral language. At various times during the week Jenny had organised for both a teacher aide and a parent helper to work with Chris. However ongoing efforts to involve the home continued to be frustrated by an apparent lack of interest. Jenny expressed this in Chris's end of year report:

Christopher's academic development has been hampered greatly due to his deficit in communication and understanding of language in use. Until he attends intensive speech therapy his academic ability (the evidence of) will be limited. His speech, as has been relayed over the years by myself and the learning support teacher, has been in need of professional intensive intervention.

Although Chris has slowly made some progress with sound/symbol relationships, his written communication is limited. His oral language has improved, both in sentence structures and grammar, although the clarity of his vocab hampers his fluency.

Chris has a good understanding of basic number concepts, however now with a higher complexity of needed concepts which leads to problem solving, because of his language deficit this is leading to problems even in the mathematical area.

I cannot stress how important the necessity of language is in relation to academic development. Chris is aware of the difficulty he has in communication and I can only hope that this inner frustration he feels at times will not be displayed through inappropriate behaviour (Written report 4-12-94).

THE PROCESS OF ASSESSMENT

An important component of Jenny's attempts to respond to the learning needs of the individual was engaging the student in a process of self-reflection so as they also could take an active part in determining their learning needs. One particular interaction with Jessica is typical of the approach Jenny adopted when working with individual students:

Jenny: What I am doing with the maths when I am working with them individually is to ask them who they are competing with. When I asked Jessica this yesterday she did not know what I meant at first. Eventually she was able to say,

well no one really. One thing she did say though was, and this made me happy, was that she thought she needed to know her multiplication tables better. She was now looking at what she needed to know; she was deciding and owning the learning (Conversation 7-8-94).

The development of a learning environment which was non-threatening and developmentally appropriate was also an essential element in allowing Jenny to implement her belief about the process of assessment, as she elaborated at a parent-teacher night:

Jenny: When you are talking about assessing, you have to ask yourself what are you assessing? What I am trying to achieve in here is to have the children assess themselves. I want them to be able to tell me what they can do and if they have a problem or need they want looked at.

Parent: How do you go about doing that?

Jenny: To me assessment is about removing the fear. In the traditional classroom, and my God I was part of it, the child learnt to cover up through fear, a fear of failure. This compensated in so many ways to avoid being a failure. So to me assessment is very much based on building a relationship where the children feel free to be honest with me and let me know what their needs are. When I am working with them on one-to-one with their homework or language contracts I can learn so much from them talking to me about what they have done. Really, what I am doing is assessing all the time, even when I am reflecting on what to write into their language contracts on the weekend.

Parent: Do you still do spelling tests?

Jenny: No, they are not tests as such, they are more diagnostic in that they tell me what the child needs to know next week. You will see it in the back of their homework books. You will not see the individual words but the words in sentences. I am really looking at how they use the word in the context of a sentence. Most of the words that they are learning to spell come from their own writing (Parent night 2-6-94).

Jenny had organised a portfolio for each student and was kept in a filing cabinet in the room. The portfolio contained the development continua in literacy and numeracy for each student and was updated regularly by highlighting the skill or concept each student had

attained along with the date. Also evident within the portfolio were samples of their work including story drafts, results of diagnostic tests, comments about significant events in the student's day and samples of best work that had been selected by the students.

BELIEFS ABOUT "POWER" WITHIN A LEARNING ENVIRONMENT

It could be inferred from Jenny's belief about teaching and learning thus far is that she was attempting to shift the power base in the classroom from the teacher to the individual student in a social setting. This shift is further clarified when Jenny provided the following explanation of how she understood the concept of power and its implications for her classroom:

Phil: Do you see the students giving themselves power?

Jenny: Yes, I even hate that word power. Power...I believe that someone's got to give a person power. To have power...every human has got potential. I'd rather use the word potential. Power portrays an oppression of some sort in some way. Potential, human potential I'd rather use than power. No, I don't see power; everyone has got potential for change. If there's an openness to yourself and you can actually sort of take in the beauty of what's around...everyone's got a lesson to learn from someone else (Interview 18-10-93).

What is apparent from Jenny's belief statements about teaching and learning is the way in which they are interrelated and interdependent with the beliefs she holds about relationships, the individual, what constitutes worthwhile knowledge.

CONCLUSION

From Jenny's story it can be proposed that the patterns of her belief positions about relationships, knowledge, teaching, learning and the process of change can be expressed through an approach which is dispositional as it frames all aspects of her professional practice. This approach also seemed to be compatible with the multi-age philosophy

favoured by the school because Jenny expressed no dilemmas that indicated a clash of cultures. Indeed, Jenny noted that the school ethos enabled her to practice in a manner that was consistent with her own sense of self:

Phil: I might have asked you this one before, but do you think multi-age has changed your approach?

Jenny: No, I believe that you have, that you yourself has aided me in my approach. I can see that you do not look on teachers as teachers but as people interacting with people and you have enabled them to enjoy the freedom of what they have got. You have enabled me to be myself (Interview 15-11-93).

Jenny it seems was able to enter the multi-age setting with a belief system that allowed her to critically reflect on how she could continue practice consistent with her interrelated and interdependent beliefs. As a result no major changes were evidenced within Jenny's belief system during the two years of the study.

DONNA

INTRODUCTION

Donna came to the school in 1989 as a neophyte teacher, having completed three years at University. In her first year at the school Donna taught in the double teaching unit with Paula, a teacher who had several years of experience in multi-age settings in another state. At the end of the first year Paula transferred and Donna continued teaching in the double unit with Dave, who is also a participant in this study. At the beginning of this study in 1993 both Donna and Dave decided to work in adjoining rooms with an older grouping of children ranging in ages from nine to eleven. However, both Donna and Dave also determined that they would like to continue with a modified form of co-operative teaching, incorporating strategies such as planning units of work together and using a “swap over period” in which the students from both groups worked together on various learning tasks.

As Donna acknowledged she came to the school with little understanding of the philosophy or practice associated with multi-age. Although she considered this somewhat of a disadvantage, she also recognised it allowed her to approach the challenges of a multi-age setting with a belief system that had not been fully shaped by teaching in age segregated classrooms. By the time this study took place Donna had been teaching in the school for five years and thus had the opportunity to refine and clarify her own belief orientation to teaching, learning and social relations. It became evident from Donna’s comments during this study that her dilemmas were more practical than philosophical in that she attempted to make her beliefs workable rather than seriously challenge them. Consequently, as can be seen from the following table, there was not much change in the research window. Donna acknowledged that there were some aspects of her practice that had changed prior to this study, such as “letting go” of a teacher dominated approach to teaching and learning in favour of an approach in which she, as a facilitator, could adapt the knowledge content to suit individual needs when possible. After having worked within a

multi-age setting for five years Donna considered a move into conventional schooling would be difficult for her, as she had developed an educational perspective that valued a non-graded approach to teaching, learning and social relations.

BELIEFS	EARLY 1993	LATE 1994
SELF	Image: mother/father, stimulator, motivator, Friend	Image: mother/father, stimulator, motivator, friend
RELATIONSHIPS	Mutual respect, interpersonal regard, trust, complex and interactive, image: taking them under your wing	Mutual respect, based on a family model, trust, interpersonal regard
SOCIETY/SOCIAL JUSTICE	Harmonious and interdependent, tolerant of difference	Harmonious and interdependent, tolerant of difference, Image: society as a solar system
KNOWLEDGE	Socially constructed, personally relevant, prior knowledge important, integrated, knowledge to problem solve	Socially constructed, personally relevant, self-knowledge important, integrated across disciplines
CHANGE	Prompted externally, seeks inspiration to improve practice through self and peer dialogue	Prompted externally, seeks inspiration to improve practice through self and peer dialogue
TEACHING	Student responsive, setting challenging tasks, supportive of learners' activities, image: motivator and instigator	Student responsive, setting challenging tasks, supportive of learners' activities, helping students become independent learners, setting positive, motivational climate
LEARNING AND LEARNERS	Self-directed, autonomous, personal understanding, constructive, high levels of learner activity	Self-directed, autonomous, personal understanding, constructive, holistic, high levels of learner activity
ASSESSMENT	Student-referenced	Student-referenced
CURRICULUM	Integrated, flexible, student responsive, skills, content, processes	Integrated, flexible, student responsive, skills, content, processes

INITIAL REACTION TO MULTI-AGE

When Donna was initially informed that she would be working in a multi-age setting it prompted the following:

Donna: When I got my posting to this school I rang up and wanted to know which grade I would be having and I was told that I would be having a multi-age group of five to eight year olds. I said, "What are you on about?" I had to say, "What is multi-age?" I didn't have clue. It makes me cranky at times to think that

I had spent three years at college and had not heard about it. You know that is ridiculous. I hope now they are instilling it (Interview 17-10-93).

This response is a common one among teachers who experience a multi-age school for the first time, indicating a possible limitation in the exposure of neophyte teachers to the potential that multi-age provides for implementing the principles of effective teaching and learning. In a later interview Donna explained the aspects of the multi-age approach that she found confusing and the anxiety it caused within her:

Phil: What was it that you found most confusing when you first experienced a multi-age school?

Donna: Just the mass of ability groups. There was no training to handle this and coming along and having to work in a team teaching situation and just this incredible age range and ability levels in the one class. I suppose it was just knowing how to let go of a lot of what I had experienced, especially coming straight from the text book approach. It was a fear thing too, a fear they are not going to learn unless you have your sums written on the board and their exercise books in front of them and the 'you do as I say' approach. It was a real culture shock (Interview 25-11-94).

Donna's observations revealed she had been exposed to a traditional orientation to teaching and learning which appeared to stress the need for a teacher-dominated classroom, and that it was necessary for her to "let go" of a chalk and talk approach if she was to work effectively in the multi-age setting. As she states in the following comments, this change was not an easy one but was possibly helped by being challenged with the multi-age philosophy early in her teaching career:

Phil: Do you think there are aspects of your practice that you have changed since you have been here?

Donna: Like I have said it is a quick learning experience coming straight from college into a multi-age school. It was really hard, but it was an advantage for me because I think a traditional teacher who has been teaching for twenty years might find it a lot harder than I did.

Phil: Why do you think that?

Donna: I think they would be locked into something whereas I was not.

Phil: Do you mean that they may have set beliefs about teaching and learning?

Donna: That is right and I was not I think. Really this is the only way I have known. I think that I am going to find that if I change schools it will be hard. If I go to a traditional school I think I will find it difficult because I will be going a step backwards I think. Multi-age is definitely a step in the right direction (Interview 14-4-93).

ADVANTAGES OF MULTI-AGE

Donna elaborated how multi-age had shaped and also reinforced what she believed to be important in education and how she now felt at ease with this approach:

Donna: I don't think I could go back to any straight type of teaching after I have taught in this system.

Phil: Why is that?

Donna: It just gives so much variety, so much individualisation. I really think that having children from different ages in the one room is fabulous, it really is. It provides for a lot of growth in every age group.

Phil: In which way?

Donna: The younger children are mixing socially and academically with the older children and getting the benefit of that. And the older ones are nurturing and teaching the younger ones and that is very important (Interview 14-4-93).

BELIEFS ABOUT TEACHING, LEARNING AND RELATIONSHIPS

In the above response Donna has highlighted two aspects of multi-age that she considered important. First, allowing for the individualising of the learning process and second, the possibilities it provided for peer tutoring in a nurturing environment. The response also provides an insight into the interrelated beliefs Donna held about teaching, learning and social relations and how these beliefs enabled her to work within a multi-age setting. The interdependent nature of these beliefs is highlighted in Donna's following response:

Phil: What are the conditions necessary for effective teaching and learning?

Donna: Emotional support which is open and built on trust. Learning strategies which are structured appropriately for the needs of the individual learner (Written response 7-5-93)

Phil: What does understanding the learner involve?

Donna: Knowing the background of the students both academic and social; previous experiences; observing the child in different situations and how they cope. Understanding the whole child, academic, physical and so on (Written response 6-8-93).

And a later response to the following question indicates her consistency of approach to teaching, learning and relationships:

Phil: How do you think learning can best take place in your multi-age class?

Donna: The students will learn if there is a social climate that encourages them to work at their level and be accepted for what they can do, not for what they can't do. I try and encourage this in my multi-age classroom by not putting labels on the students. Also if there are topics of interest and relevance that relates to previous experiences. Independent thought and opinions no matter what the age (Written response 4-3-94).

BELIEFS ABOUT RELATIONSHIPS

Donna saw her role as crucial in establishing an environment of social acceptance, trust, tolerance of difference and open communication between all the stakeholders, so that effective learning could take place. It could be inferred from her comments thus far and those that follow, that her beliefs about relationships and the individual are essential to how she operated within the multi-age classroom. Her beliefs are consistent with an approach in which knowledge construction can be facilitated by a relationship built on mutual trust, rightful dignity and reciprocal interest. Within this perspective the traditional telling-listening relationship between teacher and student, which Donna experienced in her pre-service, is

replaced by one that is more complex and interactive, reflecting the interrelated and interdependent nature of her beliefs about teaching, learning, social relations and the nature of knowledge. The significance of such a relational environment for Donna was captured in her image of the multi-age classroom:

Donna: Well family groupings is very important. I would like to see my classroom as a family, as a comfort zone where they come if they have got any problems to see me. I think of it almost as a safe zone. I think that is very important atmosphere you have to adopt in any classroom. I guess it is to have that security blanket that they can come in and feel safe within the four walls (Interview 14-5-93).

Donna stated the fundamental importance of relationships within the school community on several occasions over the two years of this study:

Phil: What is the significance of relationships for you in the classroom?

Donna: I think it is so important as a teacher that you have to adopt a motherly/fatherly approach. You must be able to take them under your wing, so that if they have a problem in learning or socially whatever, they are quit happy to come to you. There is nothing worse than being scared of someone, the fear of it, you are not going to learn. The classroom doesn't run unless there is a good rapport going on between the children themselves too. In this room they have a fantastic relationship with themselves. I mean who they are: what they are confident in doing (Interview 25-11-94).

Donna also noted how a relational environment based on a multi-age ethos had an ameliorative effect within the classroom by reducing the level of damaging competition and replacing it with a nurturing and mutually supportive attitude, particularly among the boys:

Phil: What influence do you see multi-age having on the relationships in your classroom?

I was reading some research recently which compared multi-age classes with graded classes. The research showed that the boys in the multi-age classes

seemed to be more nurturing and caring and less competitive than those boys in graded classes.

Donna: I would say definitely that it does with my class. I find in the class, particularly the boys, they still have that competition streak, but now they are really supporting each other. You will hear someone say, "Oh he cannot do that," and the others will say, "Oh give him a go." This is particularly with the younger ones. I think they have a real concern for each other, they are really nurturing (Interview 26-7-93).

It was also important for Donna that a society develop which was consistent with the beliefs she held about the nature of her multi-age classroom; one in which there was harmony, tolerance and equity. Donna used an image of the solar system to represent her notion of the ideal society she would like to see develop:

When I thought of an image of the kind of society I would like to see develop I immediately thought of the solar system, you know something that works in harmony, that runs along smoothly. That fits in with the idea of relationships then too. If you have everyone working together to make a better classroom or school then you can have harmony (Interview 11-11-94).

The centrality of Donna's relational beliefs, which remained consistent over the period of this study, had implications for how she approached teaching and learning.

BELIEF ABOUT TEACHING AND LEARNING

As will be seen, Donna adopted an approach to teaching and learning that valued a high level of learner activity and which challenged the students to construct new understandings. This perspective also recognized that students are active, creative and curious learners rather than passive ones. An indication of how Donna perceived her own role as teacher in the classroom was reflected in her following image:

Donna: I suppose I look on myself as a stimulator and motivator. Sounds almost like a sports coach doesn't it? No I suppose I really see myself as an instigator of what they learn and the students are those who decide the direction (Conversation 3-6-94).

Donna's image appears to indicate that she has adopted an approach to teaching and learning which recognises the importance of her own role in setting learning tasks for the students while at the same time acknowledging the need for the students to become self-directed and develop self-initiated and self-directed learning strategies. This approach to teaching and learning was evident in the way Donna planned her units of work and then implemented the planning in the classroom. On several visits to the classroom it was evident that Donna's image of herself as an instigator, motivator and guide shaped the way in which she operated. When implementing the unit on the human body, Donna employed strategies that allowed her to take an interactive stance with the students and their learning. One such strategy Donna utilised was brainstorming at the beginning of the unit to establish what students wanted to know and what they might like to discover whilst undertaking the unit:

Donna gathered all the students on the floor and explained that they would be doing a snowball activity to see what they wanted to find out from doing the unit and to give them some ideas for their research topic. The mention of the snowball activity created a certain amount of excitement among the students. Donna went through the procedure of the activity with them and explained that they had to think about what they really wanted to know about the body and a healthy lifestyle, write it down on the paper, roll it up and then she would give them one minute to throw their own and others around the room. Donna also stressed that they had to put "I wonder" in front of their question. When the students had completed writing the questions she asked them to start throwing them around the room. The activity was undertaken with enthusiasm. When Donna asked them to stop all the students returned to their position with a "snowball" As the questions were read out Donna wrote them on the blackboard. Typical of the questions were "I wonder what's inside me?", "I wonder how I get headaches?", "I wonder how my ears work?" After the questions had been

written up Donna informed the students that she would write them up on a chart and display it in the room. It was also noted by Donna that these questions would be used in the learning centres activities (Observation 18-3-94).

This particular episode illustrates the significance Donna placed on being a facilitator in the teaching/learning process. This approach was based on the belief that there should be a content- specific focus to the work undertaken along with peer teaching and co-operation on joint tasks. This interactive approach to teaching and learning was evident in the way Donna had set up the activities associated with the units of work undertaken by the students:

Donna announced to the students that they would be moving onto either their learning centre activities or their research projects. She stressed that it was important that when they completed an activity they should discuss it with her and make sure they had completed the contract sheet with their own evaluative comments. She also reminded them that if they needed to use the reference books to answer the questions they were on the back table. If any of the students wished to go to the library they were requested to ask first. The students moved off to collect an activity from the various centres spread around the room. The centres had been grouped under various thinking skills such as problem/solution, categorising, listing, hypothesizing, maths centre and short story center.

Sam worked on an activity that asked him to write a science fiction story about a super hero whose skeleton is on the outside. He had to give the hero a name and then decide whether his job was made easier or harder by his condition. Sam had chosen a well known football player. Emily worked at the maths centre where she was asked to survey ten people about what they had eaten the previous day for breakfast and to graph the results. Three students worked co-operatively on a task that asked them to describe what their body would look like if they lived under water. Donna sat at her desk and worked with individual students as they brought up their completed activities. She discussed what they had written and then asked them to explain their own comments on the evaluation sheet (Observation 28-3-94).

The transformative understanding approach to teaching and learning that Donna used was also evident in the way she undertook research projects with the students. As a focus for the unit on, “The human body and a healthy lifestyle”, Donna had asked the students carry out research on a particular disability they were interested in. Donna had prepared guidelines for the students:

Donna gathered the students in the library to explain the aim of the research project and the process the students would undertake. She stressed to the students that this would be their own independent study and she didn't want them to be copying information from a book without any thought going into it. “In a minute I will give you out the guidelines I want you to follow when you are doing your research. One skill we will be practicing is the use of key words, so that you can use them to put your information together. Also I really want you to be able to put yourself in the shoes of the people you will be researching. To help you I have written out some guidelines that I want you to follow.” Donna then handed out the following guidelines to the students and explained them.

STATEMENT: Many people are born with or acquire disabilities. Some of these arise from medical conditions and some from accidents.

TASK: This research project requires you to investigate a disability. There are a number of requirements for you to fulfil in the process of completing this.

YOUR QUESTION:

Choose a disability that you are interested in finding more about and name it.

Using research describe

Causes

Symptoms

Effects and problems faced in day to day life

Who discovered, identified or worked on the disability and when

Treatment, cures, breakthroughs or programs that assisted with treatment

How you would feel if you were a person who suffered from this particular disability?

What would you like to see happen in the future for people with disability?

Now that you have your question there are further requirements.

A planning sheet with the key words only is to be handed to me by March 26.

This sheet will include

headings to be used

key words

bibliography

KEY WORDS

Treatment of Diabetes

Proper diet - essential

Exercise

Obese patients - weight loss

Drugs - stimulate production of insulin in pancreas

This is an example of how the key words for one of your headings might look.

Your key words will be marked SATISFACTORY or (heaven forbid)

UNSATISFACTORY. Only after satisfactory will you begin your final draft.

Happy Learning.

After explaining the guidelines Donna informed the students that this project was their responsibility and it was necessary for them to identify why they were interested in the particular disability. It was also stressed by Donna that they list what they already know about the disability and what they would like to know. James informed the group that he would be doing Multiple Sclerosis, as his father had it and he would like to find out more about it and then to share it with the class so they would understand what it was like to live with someone who had MS. Several other students also gave their account of what they would like to do. Donna informed the students that one of the reasons for undertaking this project was to share the knowledge and experiences that the students had mentioned. Donna then closed the lesson by telling the students that they would have another sharing session next day (Observation 4-3-94).

KNOWLEDGE BELIEFS

From Donna's comments thus far it seems that her beliefs about teaching and learning also seem to be interrelated with her belief about knowledge and what knowledge is important for the students to have. For her knowledge was socially constructed and needed to be relevant to individuals. Donna placed particular emphasis on the prior knowledge of students when planning learning activities and recognised that this knowledge was continuously expanding and changing. Donna also focused on the

processes, content and skills when planning her integrated units of work. However, as she noted her belief about what constituted valued and worthwhile knowledge had been challenged by her multi-age experience and had undergone some change:

Phil: Do you think that from working within a multi-age school you really have to look at what knowledge you think is important?

Donna: Well you have to, especially with the whole teaching aspect. Like you have got five to nine year olds and you can not give the same knowledge to the whole group, it is impossible, because there is some knowledge that they do not need. Really you have to adapt to what they are ready for, what they need at that particular time. Whereas in a straight class I think you would probably grab a year level text book and say this is to be taught at this age. That is impossible in a multi-age philosophy.

Phil: Why do you think this is so. Could it be because you have to individualise the knowledge needs?

Donna: Very much, so definitely multi-age has changed my views. You come out of college and you know your are told to use this book or this book for a particular year level. Well I refer to text books sometimes. It is what they need and where they are at and then I select suitable activities from the text books. One thing also I have found teaching in multi-age is that knowledge is not just text book knowledge. If you asked an outsider they would say of course the teacher has to teach from the text book, the teacher gives the children knowledge. I was thinking on the weekend, no it is not like that. We are doing all these things in the class like prepared topics, research projects and the students are making things and sharing things with each other, now the children are learning from each other. That is so important and they create knowledge for themselves and others just by reading and sharing information (Interview 26-7-93).

It seems from her belief statements that Donna was uncomfortable with the traditional approach espoused in her pre-service where the teacher selects and organises knowledge to match or align with a graded text book. It also appears from her following comments that Donna recognized and catered for the prior knowledge of the individual student:

Donna: I do not think a teacher can come in at the beginning of the year and expect every child to know and understand the same sort of thing. In multi-age where you have the same children year after year, you know where they are at and you can go on an individual basis, rather than starting all on the same so called knowledge. You phase them into what knowledge is important when they need to know (Interview 16-3-93).

When further questioned later in the first year of this study as to what constituted important or worthwhile knowledge Donna provided the following, indicating there was no change in both her beliefs and practices:

Phil: What knowledge is important for teachers to develop and bring to the teaching-learning context?

Donna: Knowledge that is relevant for the students to know when they are ready. Understanding of each child, their needs and what they have experienced.

Phil: What knowledge is worthwhile for students to have?

Donna: Real life experiences and how to cope with these experiences. Me knowledge and how to use this knowledge to build confidence, self esteem and worth. Problem solving knowledge (to cope with crisis and dilemmas). Knowledge that will assist them to be capable citizens with high values and morals (Written response 6-8-93).

CATERING FOR THE NEEDS OF THE INDIVIDUAL IN THE CLASS

It could be inferred from Donna's definition about knowledge, along with her earlier comments about the nature of knowledge, that her knowledge beliefs and her belief about the individual are interrelated. Some of the strategies Donna employed to cater for the needs of the individual student to ensure the knowledge content was relevant to them were in evidence on a visit to the classroom in the middle of 1994. The following observation reflects the consistency of her knowledge beliefs with those of 1993:

The session started with a relaxation period. Donna put on a some appropriate music and the students proceeded to find a place in the classroom in which they could either sit or lie down. After several minutes, Donna read a relaxation exercise from a book in which the students had to imagine they were sitting by a river in a tropical rain forest. When this was completed Donna asked the students to move to the front of the classroom and sit on the floor. She then explained that they would now be moving onto their maths activities. Donna instructed them to go on with the activities from their maths books that she had marked on the inside front cover. It was noted that each student had a sheet with pages marked on it for them to complete that week, along with other activities from the maths learning centres that had been set up around the class. These learning centre activities covered various concepts such as problem solving, algorithms and group challenges. Donna then asked those who were working on perimeter to come up to the front board. She proceeded to explain the concept of perimeter to them by briefly reviewing the difference between perimeter and area and then giving them an exercise to do. When she had checked this she then asked them to go on with their maths activities books. As Donna explained later, these particular students had difficulty with the concept and she had asked them, via a note in their maths books, to come and see her when she asked. During the maths session, Donna remained at a chair to the side and answered questions from individual students or marked the work of those who had completed a particular activity. Her approach with the students was friendly and open as she worked through the activities they had done. The students continued to work on their tasks in either small groups or individually. At one stage she asked the students to reduce the noise level as some, including herself, were finding it hard to concentrate. After forty five minutes, Donna asked the students to put away their maths books and activity cards and to go on with their research work on ancient civilisations (Observation 3-6-94).

DILEMMAS ENCOUNTERED IN RESPONDING TO THE NEEDS OF THE INDIVIDUAL

However, despite her general command of the multiage classroom, Donna found the task of catering for the needs of the individual student presented her with several dilemmas. As she noted:

Donna: Certainly you cannot deny that a lot of dilemmas and challenges come up in the classroom from multi-age. Sometimes I sit back and think surely there is an easier way than this individual learning where everyone is working at their own level. It seems to be an awful lot of work at times. Then you see the benefits of it. You can see these children are all at different ages and they all sort of doing the same work but you expect different things from them. This is a hard idea to get used to in multi-age (Interview 26-7-93).

For example the difficulty of having such a wide range Maths ability in her multi-age class was a hurdle Donna had to confront, as the following classroom observation demonstrates. However the dilemma did not appear to be one in which there was a clash between an orientation which valued a lock step approach to teaching content and one which acknowledged the individual learning needs but rather a practical dilemma of how to organise a smooth functioning classroom. Jane had the students working on their maths activities. It got to the stage where demand on her time by a line of students resulted in her asking all the students to sit down, put away their books and activity sheets and go on with their research work. She commented on why she had taken this action:

Donna: Some days it really gets to me with a dozen kids lining up wanting their work corrected or to ask me a question. Actually maths is the only area I have trouble with in this set up. I could teach language all day and manage to cater for all the needs of the students but with maths there is just such a wide range of needs in the class. Like today I had groups working on pie graphs, another group on improper fractions, some on problem solving and then James who I was working with on two groups of two. Sometimes it really gets to you keeping track of all of them (Conversation 28-9-93).

It seems from Donna's comments that multi-age had presented her with dilemmas which were of a practical rather than a philosophical nature in that she attempting to make her beliefs and values workable rather than seriously challenging her beliefs. This approach was also evident with the challenges she confronted when assessing the students.

DILEMMAS WITH ASSESSMENT

The dilemmas Donna experienced in attempting to adopt a non-graded approach to knowledge acquisition were also encountered when the issue of assessment was raised. Donna noted how she had become aware of the importance for her of student-referenced testing, in contrast to the traditional grade based testing, when talking to teachers from graded schools:

Donna: You become very conscious of the multi-age approach when you go outside the school and someone will be talking about their grade six class and they go on about "A" level or "E" level. I gave them and "E" for some writing they did. I said, "What do you mean and "E" level. They said, "Well they didn't do a good job and I thought it was a dreadful piece of writing. I thought how can you do that when you label a child like that and how can that help them to learn about good writing? (Interview 17-10-93).

It could be inferred from Donna's comment that she would rather focus on student learning than student performance, as it is learning with understanding that is important. It also seems that she was conscious of the negative impact of comparing students with each other, as the 'one criterion fits all' approach to assessment implies. This approach remained consistent over the two years of this study, as the following comments indicate:

Donna: Assessment is one thing that worries me, day by day goes past and I know you do your own reflecting and observing on the students, but as for answering to parents that is a worry. They come along and say, "This multi-age is great in theory but where is my child in the class, how is her going in the

maths test?" I do write down a lot of my observations but I would rather be with them than standing back with a note book and paper taking observation. That worries me a little bit. I know we had a lot of inservice on how to take running records and all of that and I agree they have their place but I think you know more about the individual by being with them. A lot of it is in my head and if anything happened to me and a teacher had to walk in the next day they would think I had been really slack.

Phil: Are you saying that assessment is a very much a subjective thing?

Donna: I suppose I am. It is all very subjective if you are trying to look at the individual child as a whole person.

Phil: How do you think you would go if you went to a school where you asked to do weekly tests and give percentages and places in the class?

Donna: I think that if I was in a traditional school I would certainly teach the way I am teaching now, but the written testing, I mean you cannot go against what the school is doing. I would be hard. I would find it difficult to put students into little boxes. Actually it is not something I had thought about until I came here. The philosophy of the school protects us from having to label students with places and grades (Interview 18-3-94).

In her following statement, early in 1993, Donna outlined what she believed constituted appropriate assessment practice:

Donna: It should be ongoing and fully reflect the child's overall school ability and personality.

Phil: How do you assess?

Donna: The use of folios which have various samples of their work. I also use checklists and running records. I also get the students to also do their own evaluation which I put in their folios. I also use their completed theme work books and contracts (Written response 7-5-93).

The folio system that Donna employed used a variety of assessment tools. An individual folio contained development continua for reading, writing and speaking which Donna highlighted when appropriate. Samples of a student's story writing were also included to demonstrate the various stages of the writing process and particular areas that may need

attention, for example grammar. Samples of work from their maths activities, along with a selection of diagnostic tests Donna or the learning support teacher had administered, were also to be found. Comments on the student's social behaviour, a self interest inventory and other relevant observations made by Donna were also included.

THE DILEMMA OF USING TRADITIONAL LABELING OF STUDENTS

Working in a multi-age classroom had also challenged Donna to question the criteria which can be traditionally used to label student intelligence. This issue was raised whilst planning a unit of work with Dave when a comment of his prompted a reaction from Donna:

Dave: Some of the more intelligent kids always get hammered, you know with questions from others and to help them. You know with these questions they don't get their own work finished. There has got to be a big network of kids, so that the less capable can feed off the other ones and the mediocre kids as well.

Donna: This is totally getting off the track. Just on the weekend I had this conversation with some teacher friends on intelligence and I sort of query how we define intelligence. This unit of work we have just finished, you can set up all the language activities and research activities, but I don't think it is really bringing out an intelligent child. I think sometimes these children that we sort of label as intelligent, when it comes down to it, they might not succeed in life. I think how they take the opportunities that come along and how they relate with others is a sign of intelligence. I know we were talking about kids we knew at school who were real losers with school work but are now waving at us from their Volvos. I suppose working in multi-age you tend to question what is intelligence and how you label kids. There is more to intelligence than just getting high marks in exams (Interview 25-11-94).

BELIEF STATEMENT ABOUT THE CURRICULUM

It could be inferred from Donna's comments about assessment that she has adopted an orientation which challenges the belief that testing of discrete skills in a decontextualised environment provides a reliable guide to what a student knows and how they can be

labeled. The orientation to assessment also focuses on student learning with understanding, rather than student performance as it is learning with understanding that is important for the individual student and for the planning of further curriculum activities. Learning with understanding in this context is understood as improvement in achievement that is centred on understanding. The notion of knowledge as being particularly relevant to the needs of the individual student was also reflected in Donna's understanding of the curriculum:

Donna: The curriculum is a guide for teachers to give a basic idea of what is to be taught. It needs to be used carefully. True teaching of a curriculum is when parts are used that are relevant at the time and used and modified to meet the individual needs of the students (Written response 6-8-93).

In a later interview Donna elaborated her understanding of the curriculum which did not limit knowledge to an age- grade based or pre-packaged set of learnings, but rather was flexible enough to allow for her expanding knowledge of the students:

Phil: How do you go about the task of planning knowledge that is relevant to the individual student?

Donna: When I think of curriculum I think of integration. Again it goes back to the relevancy of everything, it has to be relevant to what they are doing. The curriculum and guidelines are certainly there for us to use and it is certainly a big help to keep us on track with content, knowledge, skills and processes, what we are supposed to be doing.

Phil: What do you mean by integration?

Donna: I suppose I mean you can't really separate out the knowledge and skills and processes and say this is grade four work. I mean if multi-age is going to work, you can't still be talking in grades and this is grade three work (Interview 11-11-94).

PLANNING A UNIT OF WORK

In a practical sense the task of providing a curriculum that was not grade level based but was organised around what was relevant to the students' needs is reflected in the way Donna planned units of work. The following account of a planning session in which Donna and Dave co-operatively planned with the teacher-librarian a unit of work on ancient civilisations also highlights how Donna valued strategies that encouraged autonomous learning and integrated knowledge across the various subject areas. As can also be seen, this orientation to teaching and learning often clashed with the approach favoured by Dave, the subject of the next case study:

Marg suggested that initially, Dave and Donna should brainstorm and find out what the students already knew, what they wanted to know and what they didn't know. Donna noted that this was a worthwhile strategy as they were going to ask the students to work in pairs for their research project. Donna also informed Marg that they would like the students to put all the information they gathered in a booklet form as they went through the various stages of the research process. Dave suggested that he wanted to have marks for the different areas, such as presentation and spelling.

Donna wasn't in favour of this as she thought it would encourage damaging competition. When discussing when it would be finally presented Dave suggested that, "I would like to see a deadline chart put in the classroom for when all have to have the different sections of the research process completed." Donna responded, "I don't think that would cater for individual needs or help them to become responsible for their work. I would like to see a date for the completion and that the children negotiate their own consequences if they haven't completed it

It was then negotiated as to how the groups would be formed. Initially Dave thought that an, "upper group, middle group and weaker group would be good and that we pair them off with a brighter kid with a slower kid. When the slower one works with the advanced one they would give them a push along." Donna questioned whether this would be streaming kids and thought that the students would realise they were being grouped on ability. From the ensuing discussion it

was decided to try self selective pairings with some guidance from both teachers.

When Marg produced an overview sheet for the unit that had all the various subject areas that could be covered for the unit, Donna noted that it would be useful, as it helped with the integration of the various subject areas. Other than the research topics Donna and Dave identified areas in Maths and Science they could integrate. Typical of these areas were famous scientists from ancient times and what they discovered, and maths systems used and traditional sporting activities. It was also decided by both Dave and Donna to set up a spelling list with words from the unit. Donna also noted that the students would choose their own list of words. She also added that she intended to have the students select their story writing activities from the theme (Observation 9-5-94).

CHANGE BELIEFS

It seems from Donna's story thus far that her experiences in the multi-age setting were positive ones, even though she encountered several dilemmas which challenged her practice rather than her existing belief system. However, she attempted to negotiate these dilemmas so that her approach was consistent with a multi-age philosophy. This orientation was evident in the way she questioned the notion of labelling and grading students based on an age-graded and lock-step approach to assessment, the role of the teacher in the co-operative classroom and the kind of knowledge that was important for the students. It could be assumed then that her orientation to change and her role in the process of change was a proactive one whereby the meaningfulness of the learning context for herself and the students remained dominant. In her following comments Donna outlines how she would have welcomed opportunities early in her multi-age experience to find out more about the practice underpinning it, so she had a basis for reflection:

Phil: What do you think would have helped you in your first year here to make a smooth transition into multi-age?

Donna: I think those first inservice days, when you come into the system, especially for first year teachers, you know nothing about multi-age. I had no

idea what multi-age was. To be able to sit down with a group of teachers you would get a feel for the place and find out what it is all about. So I think you would get into it before you start and think that is reflection even at that sort of stage. If you could write things down, even keep a bit of journal, even though it is not my thing, and at the end of the year to read back over it would be very interesting. You think well you got over that hurdle (Interview 14-4-93).

Donna also outlined how she preferred to resolve dilemmas she encountered through a process which involved personal reflection on events that have occurred and through collaborative discussion with her peers. This orientation to reflection appears to indicate that Donna is willing to rely on her own experiences of action in the multi-age classroom and seems less dependent on being told by others how she should act:

Donna: I reflect probably more subconsciously, driving home in the car I think. I don't ever stop and think O.K. this is what happened and what are the consequences or the outcomes, but I will do it as the day goes on. As I go to bed I will think what happened and how am I going to get over it? How am I going to communicate better in the classroom to overcome problems? So I guess everyone reflects in a different way.

Phil: Have you ever thought of writing a journal to use for reflection?

Donna: No, journal writing does not do much for me. My language on paper does not really flow well and I don't think I would express things very well. I like talking to other people about things, especially the other teachers. That is another way I reflect, I get Dave and reflect with him about what happened to me today, what is worrying me and how I can help make the classroom a positive learning one, what strategies am I going to have to change. As I go to bed I will also think what happened and how am I going to get over it. How am I going to communicate better in the classroom, what am I going to change to be a better teacher (Interview 26-7-93).

Donna also explained how she welcomed opportunities that provided inspiration for effective practice in her multi-age classroom, so that learning would be meaningful for the students:

Donna: Certainly I think the biggest thing I really need is some sort of courses, I mean I know we have probably done a lot of them but I always find that really important. For example, the inservice we did on the integrated curriculum was sort of long and drawn out but very good, especially in teaching in the multi-age situation. I would also like some professional development in the critical thinking area. You go day by day and are trying to get the kids to think about what they are doing and you think I have not done much in that area. I would like some sort of inservice, more on the practicalities of it. I do not know who would come in and do that sort of thing but I would find it very worthwhile to help the kids to develop higher level thinking skills so that they become more independent and creative with their thinking (Interview 11-3-94).

CONCLUSION

Donna's six years of experience in the multi-age school appears to have assisted her in refining and developing an approach in which the teacher had a crucial role in establishing an interactive learning environment where the individual needs of the students are recognised and catered for. Developing such an orientation challenged Donna to question the nature of the knowledge the students were exposed to and the criteria used to label and grade them. However, the process of change Donna went through did not appear to be a dramatic one but rather a gradual reframing of practices that were closely aligned with those beliefs about, knowledge, teaching and learning that underpinned the multi-age ethos of the school. As Donna notes when encapsulating the benefits she encountered working in multi-age:

Donna: My focus on what things are important has really developed. I don't have any nagging feelings that for example children A, B, C, are grade three children and they haven't grasped multiplication yet! I don't have these feelings in the back of my mind or thoughts of "I haven't taught enough because they don't know this yet! I find multi-age wonderful in that you have the same group of children for a couple of years and at the start of the next year you can start off where they are at, regardless of their year level, and you know them too. You

can treat them as individuals rather than a number in a box (Written response 8-10-9

DAVE

INTRODUCTION

Dave came to St Clares at the beginning of the 1989 school year. Prior to this appointment he had taught in two other primary schools. In his first year at St Clares he had a multi-age group with an age range from five to eight. At the start of 1990 Dave moved into a team teaching situation with Donna and taught in a double teaching unit with her for the next three years. At the beginning of 1993, both Donna and Dave opted to work with older groupings but within their own separate classrooms. However, they also decided to continue with a modified form of co-operative teaching whereby unit planning would be a collaborative exercise along with other associated activities such as learning centre work.

The following table indicates that Dave did not undergo any significant change in his beliefs and practices during the research window, but rather his experience of multi-age enabled him to implement his established approach to relationships, knowledge, teaching and learning.

Dave acknowledged that having different levels within his class allowed him to encourage peer tutoring among students of differing ability levels which in turn ensured the development and maintenance of each students self-confidence and self-esteem. Dave's approach to relationships was based on the belief that there needed to be an atmosphere of trust, friendship and mutual support so that peer tutoring could take place. He also acknowledged that such an approach to relationships demanded that his role as teacher needed to shift from the traditional teacher dominated style to one which facilitated learning within an interactive classroom environment.

Dave also believed that students should be supported to develop at their own pace, building on what they already know and are interested in. However, he also noted that there are important content domains and students should develop in all of them, at

whatever pace is appropriate. Multi-age also allowed him to group students within a key learning area according to where they were placed in the syllabus. Therefore, an individual student's achievement can largely be defined in terms of their development, but can also be calibrated to the key learning areas as defined in the syllabus.

BELIEFS	EARLY 1993	LATE 1994
SELF	Image: protector and father	Image: protector and father
RELATIONSHIPS	Cooperative, mutual trust, caring	Cooperative, mutual trust, reciprocal interest, power sharing
SOCIETY AND SOCIAL JUSTICE	Harmony, difference respected	Harmony, difference respected
KNOWLEDGE	Based on graded- syllabus but not age-locked, core content knowledge, relational knowledge, prior knowledge important, higher order thinking skills important	Based on graded-syllabus but not age-locked, relational knowledge, prior knowledge of students important, higher order thinking skills important
CHANGE	Inspiration from external sources, peer discussion, contextual needs force change	Inspiration from external sources, peer discussion, contextual needs force change
TEACHING	Directed, interactive, recognizing preferred learning styles, flexible, cooperative	Directed, interactive, flexible, cooperative
LEARNING AND LEARNERS	Prior experience and knowledge important, recognizing preferred learning styles, independent, autonomous, respecting individual developmental levels	Prior experience and knowledge important, independent and autonomous, self-motivated, respecting individual developmental levels
ASSESSMENT	Student-referenced, cohort-referenced	Student-referenced, cohort-referenced
CURRICULUM	Organized and incidental experience within the school, content knowledge, skills and processes, personal experiences	Organized and incidental experiences within the school, content knowledge, skills and processes, personal experiences

RELATIONSHIPS

Dave's approach to relationships is based on the belief that difference needs to be recognized and catered for to ensure a student's self esteem and confidence are nurtured. This belief remained constant over the two years of the study. Dave understood his multi-age classroom as a place in which the individual student could gain a sense of self affirmation and acceptance through a positive learning environment. As he explains at the end of 1993:

Dave: Our system of multi-age is a process of character building, not necessarily character building but confidence building. I would really like multi-age to give the kids a sense of purpose.

Phil: Purpose about?

Dave: Purpose about feeling good about themselves and feeling good about what they learn and how they learn. I would like the relations among the kids and with myself to be one where they feel safe enough to gain knowledge that is relevant to them (Interview 17-10-93).

Dave's image of the multi-age classroom which emphasised care, harmony and support based on mutual respect for all involved in the learning-teaching process remained constant over the two years as his following statement which was made late in the second year of the study reflects:

Dave: I just thought of an image that is directly related to our own school motto. You know the concept of simplicity and harmony, peace and sharing. If you have peace and harmony in the room, which I think multi-age is trying to do, that will encourage a learning environment, a social environment that will help things run smoothly. I see myself as one who is responsible for creating this harmony by making sure everyone is accepted (Interview 25-11-94).

Dave commented on how one particular student, who had learning difficulties, was accepted by the class because Dave had actively worked at trying to create an environment where he could be accepted:

Dave: I think it is really important to have peer tutoring in the classroom, like where slow learners are encouraged and challenged by their peers.

Phil: How do you think this takes place in your multi-age classroom?

Dave: I have got Joe who struggles with his work but I would say almost one hundred percent I can just put him with anyone in the room and they won't say, "Oh no not Joseph!" He is not real bright, he is really slow at his work but generally the whole class will help him with his work. I hope I have had something to do with this (Interview 2-4-93).

Dave also acknowledged how his personal biography had shaped the way in which he approached relationships in the classroom:

Phil: What do you think have been some of the influences on the way you interact in the classroom?

Dave: Actually I was talking to Donna about this the other day during our swap over time. I realized that my teaching has been influenced by my background. I really hated school in my primary years. I think it was because of my migrant background. I always had trouble with language in primary and was always being dragged out to the front because I couldn't spell or whatever. I remember one teacher who really gave me a hard time because of my English. It was like 'O.K. out here and see if I can teach you how to write.' It was horrible because it happened a lot. Now I am really aware of not doing this to kids. I don't want kids to have to suffer like I did in those early years. I try and be the kind of teacher who cares for them.

Phil: Is there an image you could use to describe your role?

Dave: Let me see, that is a hard one. I suppose a protector. Does that make sense? When the children are having difficulties I would like to think that I am protecting their feelings and things like that. What have some of the other teachers used?

Phil: Much the same. Some have used the image of parent or facilitator.

Dave: Yes, I suppose I would also use the image of a parent, more like a father (Interview 6-5-93).

CATERING FOR THE INDIVIDUAL IN THE CLASSROOM

Dave also noted how his multi-age classroom seemed to cater for the differing rates of learning and allowed for strategies such as peer tutoring, which in turn helped develop self esteem and confidence within the individual student. However it also seems that his images of "fast" and "slow" students and notions of "advanced thinking" are those associated with a lock-step approach to the individual:

Phil: How do you see multi-age as facilitating an effective social environment for learning?

Dave: I think it should, yes. Being stuck in your own little classroom with the same age kids, I suppose it is good, but I think there is a lot to be said for peer tutoring and exposing those younger kids to more advanced thinking. I know that sort of thing should happen in a normal classroom situation, but I prefer it happened all the time and I think multi-age allows it to happen. Maths is one of my fortes, I like doing Maths with the kids and is one area where you can say, "O.K. I want you three over here with the level fives because I want to make sure these level fives know about this and I think you are good enough." I do not say they are good enough, I thinking this in my head. I sometimes even grab those ones who are on the borderline. You do not just say I want you over here because we are doing something harder. It is just come here I want to do this with you. For example we did radius and diameters and just introducing those concepts the other day, that is a fifth year thing and just about all the fourth years know about it now. Anyway and if they remember it well and good but that is the sort of thing in some way you cannot have in a say grade four classroom where you have got slow ones and fast ones and things like that. Just say in that classroom where you have half who are level fives and you are doing that with them anyway and you have to send the others away or try and distract them somehow. I feel multi-age is really good as it builds esteem and confidence and things like that both ways as a helper and a learner (Interview 10-11-93).

The benefits of such an environment became evident for Dave when he was dealing with a student who had social-emotional problems and at times proved to be highly disruptive to the smooth functioning of the classroom:

Dave: You look at my main person, we all know who we are talking about. I don't tear my hair out over him any more, even though this is the third year I have had him. When he is prepared to learn he will sit and do it. The main problem is that he goes in to upset all the other kids who are doing the right thing. One good thing I hope is that he is not cringing in fear in the corner of the classroom because of the way I treat him.

Phil: How do you treat him when he being anti-social?

Dave: I suppose by trying to build up trust. Maybe that is one of the good things about multi-age. Like he is good at Maths and I can get him to work with some of mediocre Math students. Just making him feel special. When I can't do that then he is off to you (Interview 17-10-93).

BELIEF ABOUT SOCIAL JUSTICE

The significance of the multi-age classroom as a setting in which difference is not highlighted emerged in Dave's following beliefs about social justice within the classroom. However there also appears to be a contradiction in how he defines difference, as it seems to be predicated on the traditional year levels, rather than a non-graded notion of difference which avoids normative labels:

Phil: How do you think multi-age caters for the individual in your classroom, particularly from a social justice perspective?

Dave: Just this concept of repeating a grade, O.K. multi-age has got one up on that.

Phil: How do you mean?

Dave: Well because they are not told they have to stay down a year or whatever, because they are operating where they might be across two or three grades, sorry levels.

Phil: How is this manifested in your classroom though?

Dave: The major differences are not brought up like O.K. I want to see all the second years and I want to see Tom, Dick and Harry because they can not do this. I do not say this. I say I want to see all the second years and I want some helpers and that builds them up by not telling them. If they are not told from the very beginning that they are below the year level, like O.K. you guys cannot do this, that is why you are here, it just goes over the top of their heads and they think fine. O.K. I am doing this because I am helping the others (Interview 17-10-93).

Dave also used the notion of a grade level to determine his own expectations for individual students, particularly when it related to their well-being:

Dave: My expectations of a sixth year are different from those of a fifth year student. I try not to pressure the kids. There is competition but not the sixth year compared to a fifth year or a fourth year. It is more competition against themselves. For example, Peter does not need pressure from school as he has enough from other areas. It is all different with different individuals. I've got a fifth year who I would expect to be working at a sixth year expectation. With Peter I don't have a high expectation. Even though he is in his fourth year I do have a certain expectation, but it is not at a fourth year level, more a third year (Conversation 23-7-94).

It could be assumed, from his statements, that Dave's practice is guided by the belief that learning can be facilitated by mutual trust, reciprocal interest and rightful dignity. It also seems that this practice is underpinned by the belief that students can be categorised according to various "levels" using the syllabus documents in each of the key learning areas as a continua reference. As he notes:

Phil: What affect do you think multi-age has had on the relationship between yourself as teacher and the students?

Dave: In multi-age I work more with ability groups rather than age groupings (Written response 6-5-93).

The use of ability levels was evident on several visits to Dave's classroom. As he note, he referred each student's achievement in a key learning area to a syllabus continua and mentally grouped the students into three 'levels' within a key learning area:

Phil: How would you see multi-age as being different from a composite year three four or a traditional grade four?

Dave: It is virtually a multi-age anyway, so why limit your class to holding some kids that are in grade four because of their age level, why not put a whole lot of kids together on different ages and teach different levels within the class. The

children can move easily between them, except I have got kids like Tom James in my room, you teach him a level four concept in maths and he has got it, he is ready to go onto the next thing. Why beat him over the head; why not push him into the next level if he is capable of doing that and he is ready for it?

Phil: What do you mean by levels here? It is a term you use a lot to describe the work students have to do.

Dave: I suppose it is the same as how the curriculum sees it. Like in maths a level five concept would be in the year five maths book (Interview 8-5-93).

Dave's use of levels which are grade-referenced standards in each key learning area were evident on several visits to his classroom:

The students were working on their own or in groups at the trapezoidal tables that had been arranged in varying patterns around the room. These groups were self selected and reflected the friendship groups in the class. The whole class was working on measurement in their maths books. Each student had been allocated a book that Dave considered was appropriate to their year level. As the students worked on the activities Dave sat at his desk, which was situated at the back of the class, and marked the students' books as they completed the set activity. When this had been done he handed them a prepared worksheet. The purpose of the worksheet was to extend what they were already doing, but only if they could cope with it. Some he noted were doing level five worksheets even though they were really only at level four in maths. As the students were given these worksheets they moved back to their tables and continued to work on them. During this time Dave also moved about the room talking with individual students. He also reminded them if there was something about the activities they did not know then they should ask someone who is working on the same level as they are on, or a level above. On the board there were also maths operations with multiplication. These had been divided into L4, L5 and L6. As Dave explained these were the three different ability groups that he formed in the class and were "roughly equivalent" to the year levels (Observation 22-7-94).

Dave's belief that the classroom should be a place in which there was a sense of co-operation and mutual support was also reflected in his belief about power:

Phil: How would you understand the notion of power as being significant in your interactions in the classroom?

Dave: The sharing of power, power basically I think means sharing the work load with the students and your teaching partner, like Donna and myself. It is sharing the discipline, your authority in the classroom. It is just not the teacher's responsibility. It is not so that only the person is the big boss all the time. It has to be a two way thing. It is sharing (Interview 23-8-94).

KNOWLEDGE BELIEFS

Dave's general approach to knowledge appears to emerge from the belief that content knowledge is an integral part of the curriculum and is often defined on the basis of the graded syllabus documents. However, he also recognizes it is important that students build knowledge and understanding by linking to what is already known and that this process can be facilitated by developing a range of creative and critical thinking skills. It seems then that Dave's knowledge beliefs, which remained essentially the same during the study, value the importance of engaging students in activities that challenge them to construct new understandings and insights and that this role is crucial in establishing the appropriate conditions and support. Dave's use of levels within a key learning area and referenced to the individual is also reflected in his definition of the syllabus provided in early 1993:

Dave: With the syllabus, I think it is an overlapping thing. For example if you have got mainly level four and five, you have to cover from level three to six content (Interview 16-3-93).

His following comments later in the same year indicate he also espoused an approach to knowledge which promoted continuity of experience by identifying and extending from prior knowledge and experience:

Dave: I think knowledge is what the students come in knowing. If a child is ready to accept a certain level of knowledge or apply the knowledge. For example with

a maths concept, if you want to talk about parallel lines, if they are in the fourth year and this is a fifth year concept, if the knowledge acceptance is at a fifth year level where they can take it fine. If it is not we talk about it next year and seeing it is a multi-age classroom they pick it up when they are ready. It is really later on in the year when you are realising with the older ones that they have matured a bit more and their knowledge acceptance level may pick up a bit more (Interview 14-5-93).

DEFINITION OF THE CURRICULUM

It seems from Dave's initial comments that his understanding of knowledge is guided by what is contained in the syllabus documents and more particularly in the graded text books. However his following statement about how he understood the concept of the curriculum also acknowledges there are additional aspects of knowledge that need to be considered, other than core content knowledge outlined in syllabus documents:

Dave: Curriculum involves all learning areas experienced in and out of the classroom. It involves academic areas of study, personal interest areas and behavioural patterns, family background, our own knowledge of content to be discussed and being prepared to accept children's knowledge (Written response 7-8-93).

Similarly, Dave's following comments appear to indicate that his belief about what constitutes worthwhile knowledge also extends beyond the notion of pre-packaged content to include physical, social and intellectual skills:

Phil: What do you think constitutes important or worthwhile knowledge?

Dave: Core content, knowledge of social skills and behaviour in group situations and knowledge of their own experiences (Written response 7-8-93)

Phil: What knowledge is important to share in the classroom?

Dave: Life experiences, children's and teachers' general knowledge and directed learning experiences to help with independent learning (Written response 14-10-93).

CONTENT KNOWLEDGE

The importance of content knowledge however appears to be a significant element of Dave's belief about what constitutes important knowledge. As he explains in his following comments, content knowledge contained within the graded syllabus documents is used as a basis for determining where students are "at." However, as he also acknowledged earlier, it is important to establish the prior knowledge that the students bring with them:

Dave: I feel to give children knowledge you can not sort of start to throw things at them, you have to know the children and try to understand their needs, before you try to inflict anything you know personally on them. So at the beginning of the year, when they come to school, you have to firstly find out where they are at and in particular what needs they want and what they already know perhaps before you can start. You can not give them a concept that is really difficult if they do not know the basics beforehand.

Phil: How would you go about establishing what they know in your class. What kind of strategies would you use?

Dave: I find maths difficult to put them into a level because there are so many concepts. I basically work from their Maths book, like if they have a level five or grade five maths book they work with that. If I find they can't handle it I drop them down a level. With language they can write you a passage and you can edit it. So you can see that they need more work on punctuation or full stops, of if the story is coherent. With the spelling I use quota spelling scheme and that picks the level of spelling they need to use by the test at the front (Interview 14-5-93).

DILEMMA OF PREPARING STUDENTS FOR HIGH SCHOOL

Dave's focus on responding to the individual knowledge needs of the students in the multi-age setting also presented him with a dilemma particularly when confronted with preparing students for high school. As his following comments appear to indicate, Dave felt

compelled to teach subject content in the final years of primary so as to ensure the students were suitably prepared to undertake a secondary curriculum:

Dave: Individualising learning is taking the kids from where they are at and going from there. I know we had a discussion at the staff meeting about what happens when they get into the older grades and what they are facing in high school. From what I can gather high schools all want one level and they take it from there and that cramps our style with the so-called individualised knowledge.

Phil: How would you see this happening?

Dave: With the younger kids especially the little ones and the middle grades, sorry levels, it is not so bad you can take them from where they are at. To cross over to high school with the older levels you really have to teach them the content so they are ready for high school.

Phil: What do you mean by the content?

Dave: Like with the maths, they have to know all the level seven maths (Interview 17-10-93).

DEVELOPING THINKING SKILLS

Even though it seems that Dave emphasised content knowledge he also appreciated the importance of developing a range of thinking processes, including information literacy skills and higher order thinking skills. The development of these top-level structures became evident when Dave and Donna co-operatively planned a unit of work on communication during the second year of the study with Marg, the Teacher Librarian:

Phil: How did your understanding of the syllabus influence how you and Donna planned your unit of work on communication and how did it help you individualise the knowledge needs of individuals?

Dave: Well we decided to do this unit on communication.

Phil: Sorry for interrupting but how did you decide on this particular unit?

Dave: Well as I said we looked through the social studies syllabus and thought this would be suitable. What we ended up doing was starting off with our

objectives and our overall plan. We had a topic and we decided what that was and then we started with the activities. We listed a whole lot of activities for learning centres and research topics we thought of or we would like to implement.

Phil: So you started with the activities first?

Dave: We knew we wanted to talk about communications and we had a general idea we wanted to break into personal communication, then the different modes of communication. We managed to get ourselves bogged down with all of this so then we said why not look at the skills and processes that we want the kids to get out of this unit. It might seem back to front but we thought it was important that the kids could generalise, hypothesise and problem solve and stuff like that rather than know a whole lot of content.

Phil: Did you find that the syllabus helped you with this?

Dave: Social studies did because it has all the skills listed.

Phil: What particular skills were you looking at?

Dave: Let me think. Well we wanted the kids to be able to work out what they didn't know about some particular aspect of communication and then write it down and then use Marg in the library to help with the research skills.

Phil: How has that been going?

Dave: Really well. Marg has been great at getting them moving away from all that copying stuff and getting them use to note taking, key words and all that. Like at the moment we are doing reporting and they have to make a spider web with questions on it. So I suppose you are trying to work with what they already know. They have to write all the questions about it, write the key words and then write these into a sentence and then plan the layout. In some way these skills are more important skills in later life rather than just content because they have to know how to find important knowledge. So it is just not knowledge that is facts and figures, it is also learning how to learn (Interview 3-3-94).

TEACHING AND LEARNING BELIEFS

It can be inferred from Dave's comments about knowledge and knowledge construction that he espouses an approach to teaching and learning that values the learner as an active constructor of knowledge through experience and opportunities to discover and enquire.

This approach to learning and teaching also acknowledges that the separation of learner and content can be problematic and that what is required is an interactive approach which values what students need to know and how they construct knowledge. Within this perspective then students are seen as active, creative and curious learners rather than passive ones.

CATERING FOR THE LEARNING NEEDS OF THE INDIVIDUAL

Dave conceded early in this study that teaching in a multi-age classroom caused him to reconsider how children learn. In doing so he recognised that his personal biography had instilled in him the importance of following a lock-step and time-tabled approach to learning which possibly failed to account for how individuals learn:

Phil: How have you found the teaching and learning process in the multi-age class?

Dave: It is hectic, it is busy. Because of the rigid lines we have been brought up with, where you have to teach this particular thing now and then this particular thing now. You sort of have to have all those subject matters going on now and at the same time be prepared to cater for the learning needs of the individual. In some ways you have to be really relaxed in the knowledge of the way children learn and not be stuck to convention, otherwise you would send yourself around the twist, because you are forcing them to try and learn things they are not prepared to (Interview 16-2-93).

Later in the same year Dave highlighted the significance of recognizing and catering for the needs of the individual.. This was a belief that Dave considered significant, particularly as it related to the differing rates at which an individual student learns and the learning style preferred. He also declared it was important that what I was taught must be relevant to the needs of the student and enhance their existing conceptual framework:

Dave: Every child is a learner. They learn at different rates. They have one or more different learning styles to process knowledge, so we need to adapt our lessons to cater for as many as possible.

Phil: How do you think learners construct meaning?

Dave: By processing knowledge content and experiences which are meaningful for them and fit into their present knowledge concepts .It is important that a safe and supportive classroom exists so that they can develop the knowledge that is meaningful for them. The teacher needs to find out what knowledge individuals have to make sure that individual needs are taken care of (Written response 7-8-93).

This belief about the learner as someone who processes relevant knowledge at varying rates is reflected in Dave's approach to organising activities within the classroom, where the need to allow students to become independent and autonomous is stressed. A motivation for having the students become independent seemed to be a functional one so that Dave could have time to work with individual students without being distracted. One strategy that Dave found useful in helping students become independent learners was the learning centre:

Phil: What do you think is an important belief to be considered when approaching the learner in the multi-age classroom?

Dave: Independent learning, that is a very big thing, because you have got every person in the class has a different way of learning, they have to be independent because you have to get around to as many of those kids as you can. If the other kids are not independent they just sit there and waste time. So being able to work at their own pace and think ahead. "Oh yes I have done this and now what will I do?" (Interview 14-9-93).

The use of learning centres in the classroom, with activities based on the particular theme topic being covered was evident on several visits to Dave's classroom. One particular theme was "The Media" that he implemented in late 1994:

Dave had the students on the floor at the front of the classroom after having completed the morning talk session. He explained that they would soon be moving off to work on the media unit which they had recently started. Dave reminded them that there were a total fifteen learning centre activities that he had set up around the room. He also drew their attention to the multiple copies he had of the Courier Mail and reminded them that they were to be returned to the central position when they had finished them. As he added, "I will not go through the leading articles today, that will be your responsibility. I think you all should know the main sections of the paper now." Dave then proceeded to explain how he wanted them to work on the learning centres he had set up and that he did not want them wasting time on the cartoon activities or the sport section. He reminded them of the importance of filling in their contract sheets correctly, particularly when identifying the skills listed with each activity, such as problem solving, comparing and contrasting and analysing. Dave added that he would be asking each student about these skills and how they undertook them when they brought their contracts and work up to be checked. As the students worked on the various activities, Dave moved around the room interacting with the students. Michael approached him to ask whether he could go and interview the groundsman about litter around the school for an article he was writing for the class paper. Two other students asked Dave which world issue they should cut out and paste in their scrapbook. Dave suggested they discuss it among themselves and then give reasons why they selected the particular issue. As the session continued Dave proceeded to mark their learning centre activities and to write evaluative comments on their contract sheets. As each student worked with Dave he questioned them about their written responses and asked them to explain the critical thinking skills they had used (Observation 20-7-94).

THE ROLE OF THE TEACHER

Dave noted on several occasions how he believed that learning should take place with a content-specific focus along with collaborative and socially shared intellectual work, such as peer tutoring or spontaneous collaboration. However, as he observes in his following comments, this approach to learning necessitated a shift from the traditional role of the teacher as one who transmits knowledge to one who facilitates the learning process:

Phil: How do you understand learning in relation to your role as a teacher in a multi-age class?

Dave: There is learning from us as teachers, there is learning from their peers, there is learning from our own experiences, from the environment they are in. There are things they ask each other as in questioning techniques, the questions they ask us. It is not just us standing at the front and wandering around and saying this and that and the other. It has got so many aspects to learning and in some ways I think we have to get away from the mentality that they teacher provides all the input (Interview 17-10-93).

However the process of encouraging the students to become independent and autonomous learners was a task that Dave initially found difficult in his multi-age class when he first arrived at the school four years prior to this study. As he notes, he had to gradually relinquish control over the process of inquiry and learning as well as control over with whom and when the students discussed their understanding, but was able to accomplish this and become comfortable with the approach. His following comments made at the end of 1994 demonstrate the consistency of his approach to teaching and learning with those belief statements made earlier:

Phil: What was it that you found hardest to let go of when you starting teaching in a multi-age school?

Dave: When you are in total control all the time. I am not saying that the students are out of control all the time, but one of the facts is that in multi-age teaching the individual is important. Sure you have to teach the whole class sometimes but then you have got to let them go and work as individuals on the particular areas they have to. I suppose you saw me head down on the floor this morning, the bulk of them were at the tables doing their maths. I had kids that were just flooding backwards and forwards either for correction or asking me or someone else how to do something. The kids at the tables or wherever they are working, they have got to take responsibility for what they are learning and doing (Interview 25-11-94).

Dave also stated how the process of learning could only be meaningful if what the individual student was learning complemented their existing mental framework. The following response was given in a dual interview with Donna, another participant in this study:

Phil: How do you think learning best takes place?

Donna: I think my main philosophy of learning is that learning can only take place when the child is ready to learn and secondly you are teaching something that is fairly relevant to their needs.

Dave: I would say exactly the same. You have to teach something that is relevant to their needs. A word that a child is really interested in knowing or what it means or how to spell it or whatever, if they are really interested and motivated they will learn how to spell that or they will remember the meaning (Interview 25-11-94).

CHANGE BELIEFS

It could be assumed that these beliefs about knowledge, teaching and learning and relationships are also evident within Dave's approach to change and in particular how he understood the content and process of reflection. Dave's change beliefs appear to emerge from a perspective that involves some dependency upon external authority, yet one which values the efforts of the teacher to act professionally in the interests of the students. As Dave acknowledged, multi-age had "forced" some changes on him, such as his approach to assessment. There were also changes that he readily accepted such as catering for the learning needs of the individual student and recognising the importance of the students becoming autonomous learners.

When Dave was asked what he understood by reflection and the significance it played in changing his approach to life in the classroom he responded with the following:

Dave: We reflect everyday. For example you reflect on how your day has gone and maybe you reflect on individual kids, like he could do better with his research or she has completed a story draft really well and what can I do with it.

Phil: Do you think reflection helps you understand or make meaning out of the problems you may encounter with multi-age?

Dave: I suppose it is a continual learning process, depending on the structure and personalities in your multi-age class. That is a really hard one to answer but I suppose it is reflecting on the individuals in the class and how you can support them(Conversation 6-5-93).

It seems that Dave considered reflection as a way of thinking about the learning of individual children and how to make the learning experience a meaningful one, particularly by focusing on their current understanding to decide the appropriate next step. It also appears that how and what he reflected upon, and the resulting change, was dependant on the nature of the multi-age classroom and the expectations this environment placed upon him. Dave noted how working co-operatively with Donna had assisted him to change some of his approaches to teaching and learning, such as group work and teaching particular skills to the students:

Dave: Like the last couple of years working with Donna we have tried different things that have changed me. We changed this year with our language. We have worked out key areas in our syllabus.

Phil: Sorry for interrupting, but what are these key areas?

Dave: Well like Donna takes one small group and I take one small group and then we have our independent groups that work on activities and learning centres and stuff like that. Like I will work with a grammar group on verbs or adjectives or things like that and Donna will work on letter writing or some skill like that (Interview, 10-11-93).

CONTEXTUAL INFLUENCES AND CHANGE

Dave also elaborated how one particular contextual expectation influenced him when he was asked what factors led to a change in the way he approached teaching, learning and social relations:

Dave: A teacher's needs forces the change, because if you teach a certain way day in and day out, it gets boring. It not only gets boring for the kids, it gets boring for you too. You have got have a bit of variety to it. The school environment forces a change too. Like working here with multi-age.

Phil: So are you saying it is the philosophy of the school which causes change?

Dave: Yes I think it is the position that you are in that forces you to change. Like with assessment. If the administration wants outcomes, marks and places in class or if they want processes and outcomes and I think the staff react to that. The boss says I want outcomes, I teach outcomes. If the boss wants processes and outcomes that's what I teach. I do not want to loose my job and if you do not teach the way the boss wants you to teach then there is going to be pressure there and he or she will be on your back and you will eventually be forced to change (Interview 10-11-93).

It might be inferred from Dave's comments that he is influenced by institutional definitions and expectations and these in turn induce change. One particular area in which he felt compelled to change was with assessment. The school's approach to assessment focused on allowing teachers to individualise and meet the learning needs of each student without depending on normative criteria. Dave had adopted this method of assessment, but it also seems that he might be prepared to discard this approach and focus on traditional testing methods if so required by the institution. This apparent dependency on an external authority to generate change was also evident in Dave's following observations:

Phil: Have you worked out or thought of areas that you would like to change in your own approach within the classroom or are there opportunities that might help you to change?

Dave: With professional development, I think it is the area where other people set you the example. Like getting people to come into the school and demonstrate or talk about particular things, be it language type things or maybe science area to create a lot of enthusiasm in the school.

Phil: What are the things that might normally inhibit you from changing, say with your own philosophy on multi-age?

Dave: Resources is always high on the list, you have got to get the resources and space to do things. I think we need a bit more spent on the maths area or science area, especially the science area. Maths is not too bad, just need more calculators for the older kids (Interview 23-3-94).

PROFESSIONAL DEVELOPMENT

Dave also acknowledged that the need for professional development could not be limited to the school context only, but he was uncertain as to what particular development needs would be appropriate for him:

Dave: I think professional development is broader than just what we do in school, not just O.K. I am the teacher and I have to learn about science. I think it is something that also broadens you own personal self. You would be pretty static and boring if the only sort of professional development you did was to do with your career.

Phil: What do you think would be significant for you?

Dave: I haven't really thought about anything at the moment but like my wife is doing a writing course, it is to do with children's stories, that might be alright (Interview 23-8-94).

CONCLUSION

At the end of this study Dave acknowledged there were benefits within the multi-age system which were consistent with his beliefs. The following comments reflect the approach Dave adopted over the two years of this study to social relations, teaching, learning and knowledge construction:

Phil: What are the benefits of multi-age teaching for you?

Dave: I like the give and take. You can present them with concepts beyond their year level. If they are bright enough to take it in they can do that. For the kids that are slow and won't make it in the traditional system multi-age is good too because they won't be labeled as failures or slow all the time. I like the way you can have a family atmosphere in the classroom and everyone can help each other to learn (Written response 2-10-94).

KATHY

INTRODUCTION

Kathy entered St Clares in 1993, the year this study began, as a neophyte teacher after having spent three years pre-service at university. Kathy had no previous experience of working in a multi-age setting, and as she noted, the concept was quite foreign because it was not included in her conventional pre-service curriculum. When Kathy was appointed to St Clares at the end of 1992, she organised to spend a day at the school so as to gain some initial insights into how the multi-age philosophy was implemented. Although she acknowledged at the time that the visit left her “a little confused” she was attracted to the concept and considered she could make it work both for her and the students. At the beginning of 1993 Kathy commenced her first year of teaching with twenty seven students ranging in age from five to eight, a grouping she felt comfortable with.

As can be seen from the following table, the existing belief system Kathy brought with her reflected a constructivist approach to teaching, learning and social relations and seemed to compliment many of the beliefs underpinning the multi-age ethos of the school. Even though Kathy had been conventionally trained as a teacher, she found some of the approaches adopted in her pre-service, such as a transmissive lecturing style, clashed with how she believed teaching should take place. Kathy noted how her early exposure to a multi-age philosophy allowed her to question the nature of syllabus based knowledge, thus possibly avoiding being conditioned by traditional approaches to the implementation of the curriculum. As can be seen from the following table Kathy did not experience any significant shifts in her beliefs over the two years of the study. However, she did experience some challenges with how she approached relationships in the classroom, which caused her to reflect on how she approached the process of knowledge construction in the classroom.

BELIEFS	EARLY 1993	LATE 1994
SELF	Neophyte teacher, helper, nurturer, friend, image: a key to open doors to knowledge	Helper, nurturer, friend, image: gardener
RELATIONSHIPS	Open, interpersonal regard, power sharing, interactive, supportive, cooperative	Supportive, interactive, reciprocal interest, individuality respected, power sharing
KNOWLEDGE	Graded-content knowledge, integrated, thinking skills, self knowledge, relational knowledge, basic skills, socially constructed	Integrated, socially constructed, subjective, continually expanding and changing, thinking skills
CHANGE	External prompting, seeking inspiration through self and peer dialogue	External prompting, seeking inspiration through self and peer dialogue
SOCIETY/SOCIAL JUSTICE	Harmonious, cooperative, open communication, mutually supportive	Harmonious, cooperative, open communication, individual respect
TEACHING	Approachable, shared task, facilitator, developmentally appropriate, direct when needed	Approachable, shared task, facilitator, supporting learners' activities, supporting reflection, modelling strategies, image: key and gardener
LEARNING AND LEARNERS	Active, personal understanding, cooperative, peer tutoring, constructive, developmentally appropriate	Active, personal understanding, cooperative, risk taking, self-evaluating
ASSESSMENT	Student-referenced, based on mutual trust, broad based including attitudes and skills	Student-referenced, processes and products
CURRICULUM	Integrated, content, processes and skills	Integrated, all experiences both arranged and accidental, broad and encompassing

BELIEFS ABOUT RELATIONSHIPS

Kathy's description of her beliefs about the nature and importance of relationships and the dilemmas associated with them provide an indication of her beliefs about self and the centrality of self in relationships. It could be inferred that she is espousing a pattern of beliefs in which there is an emphasis on learning to live within a caring community and a

sense of interpersonal regard for the welfare of the students. Kathy's image of herself as a "gardener", for example, reflects these beliefs about relationships within the classroom where she saw herself as having a crucial role in creating a climate of social acceptance, tolerance and open communication between all participants.

Kathy it seems was able to make sense of the early dilemmas she experienced with classroom control because of the particular beliefs she held about relationships. As she noted it was not so much the multi-age setting which proved to be an inhibitor but rather the challenge of trying to reconcile two apparent conflicting problems; maintaining order and establishing an interactive supportive learning environment. When reflecting on incidents that occurred within her personal biography before she came to St Clares Kathy provided a glimpse into what appeared to be established beliefs about her sense of self, relationships and the significance of the individual in the teaching-learning process. As will be seen Kathy experienced little change over the two years in how she understood herself and the importance of self in relationships.

SELF AND RELATIONSHIPS

When reflecting on incidents that occurred within her personal biography before she came to St Clares, Kathy provided a glimpse into what appeared to be established beliefs about her sense of self, relationships and the significance of the individual in the teaching-learning process. The decision to become a teacher emerged from a number of experiences which helped to clarify not only the professional direction her career might take but also the motivation for doing so. It was her interest in, and a perceived gift for, helping others that prompted her to enter teaching:

Phil: What was a major influence on you becoming a teacher?

Kathy: What made me want to become a teacher?

Phil: Yes, what influenced you?

Kathy: All the way through school, all my work experience and that sort of thing was all over the place. I did all sort of things. Then in year twelve I just decided I

would become a teacher. I did work experience as a nurse with old people and I think it was something my Dad said to me like, "you are a natural." Like I get a lot of enjoyment out of seeing other people do things, like knowing how to do it. If I can help them understand, that gives me enjoyment. Oh yes and I worked with some disabled people from a home at Sunnybank, like helping them when they were getting a haircut and social skills like that. There was also a boy across the street who I used to help as a tutor and I found that very rewarding (Interview 26-3-94).

Kathy it seems had begun to establish an image of herself as a person who could assist and nurture others in making meaning out of new knowledge, whether this be in an academic area or particular skills in social situations. Thus the decision to become a teacher seemed a natural progression for her.

On entering pre-service Kathy found that some of the beliefs she brought with her clashed with those charged with the responsibility for shaping her beliefs and practice about teaching and learning. The transmissive style of some of the lecturers, for example, seemed to run contrary to the interactive orientation to teaching that Kathy favoured:

Kathy: My first two years of pracs were pathetic, the things you had to do, you did not learn anything really. The lecturers, they were the worst role models, they would be up there reading notes, saying you have to do this and that (Interview 17-11-93).

Similarly some of the teachers responsible for supervising her practicum appeared to maintain an orientation to social relations in the class that was both authoritarian and distant, a notion Kathy did not feel completely comfortable with:

Kathy: I always wanted to make sure I was just not a teacher in the sense that I was there just to teach and that is all. I wanted to get on with everyone. Then I found that when I was on prac, if I tried to do that the teachers would warn me

not to get too friendly with the children because that is not what they wanted, and that sort of thing. I did not know how far to take it (Interview 16-6-93).

However, Kathy was also able to enjoy some positive experiences on her pracs which resonated with her beliefs about her role as a teacher as one who was not there simply to impart knowledge and act as a control agent:

Kathy: My last three prac teachers were definitely the teachers that moulded me. Trish Stevens for sure, Donna James was the teacher I really learnt a lot from. I had a fabulous time and Craig from Daisy Hill. Craig had a grade two class and even though it was a graded class he worked it very openly. Trish was one of the young teachers and it was not 'here is your Social Studies book, and we are doing Social Studies now.' She had one big book and she worked it into two units like we are doing here, which I think works much better. It is not like we are doing Social Studies every Tuesday afternoon or whatever. Like you can still have themes. I had to do a theme on prac, I think I was doing a theme on monsters, but then I was doing rules in Social Studies (Interview 17-11-93).

DILEMMAS WITH CONTROL

However the dilemma of juggling two competing imperatives, that of maintaining control and discipline and at the same time developing a personal approach with the students, was of initial concern for Kathy before her first year of teaching in the multi-age class started:

Kathy: My main concern is that there has not been a great deal of input on how to teach multi-age. However I am looking forward to having a class and not somebody else's who is looking over your shoulder while you are teaching. I believe you should not be over friendly with any grade straight off at the beginning of the year. I must still be sure that I give the children the impression that I am very approachable and respect their individuality (Journal 29-1-93).

At this early stage of her teaching career Kathy has signalled the tension between maintaining an orderly classroom environment and the need to respect the individuality of the students and develop an approachable and friendly rapport with them. It was these competing imperatives that provided Kathy with ongoing dilemmas, not so much the dilemmas presented by a multi-age approach, although these also emerged. As Kathy notes, she enjoyed her first experiences of teaching, but the challenge of implementing effective behaviour management strategies was eluding her:

Kathy: I wake up and really look forward to the day ahead of me. My main concerns at the moment are not about my teaching, they are about how to handle certain behaviour. I am not quite sure about suitable punishments to give when the kids don't behave. Also I am not wanting to continually raise my voice but the children are still not co-operating when I stop and wait (Journal 26-2-93).

Kathy also described the difficulty she found with controlling some of the more active students when she did not have the assistance of the teacher-aide. This particular aide had considerable experience in schools, and provided Kathy with valuable professional and personal assistance. However at times Kathy felt overshadowed by the teacher-aide because of a perceived gap in experience, but also recognised that teaching was the profession she was to follow:

Kathy: Sometimes I find on the days that Mary is not there, the older ones test me a little bit. I feel they are not listening or doing what they should be doing because Mary isn't there and maybe because they see me as a first year out teacher. Then I mean that will come with time. I suppose too having had Mary for a number of years now they know her more than me. I think they sometimes feel that she is the teacher and they listen to her more than me. I don't feel like that all the time. Just on a Friday mainly; the classes get a bit all over the place and the kids get a bit hectic. You can soon get it under control. Today was pretty good and on the whole I am actually loving it. I know that teaching is my vocation (Interview 26-2-93).

TEACHING AS A SHARED TASK

Kathy's concern with developing a classroom ethos in which responsibility for behaviour would become a shared task was reflected in the process she used to negotiate the class rules:

Kathy: It really got to the stage where it was time to work out a few rules. I wanted to be open to ideas from the children and let them understand the consequences of their actions. We started by looking at the three school rules, you know about respecting bodies, feelings and property. I really wanted to make it positive, not a lot of negatives so that when rules are broken we could reason and discuss why we have problems. I think the rules and the consequences that we came up with covered all that I wanted to. The good thing is that the children themselves identified a lot of the consequences, which stops me from being the old dragon. Anyhow they seem to be working alright at the moment. You can see them up on the wall over there (Conversation 23-4-93).

The negotiated class rules were clearly displayed on the wall of Kathy's classroom, with a colour code beside each rule, indicating the consequences if the rule was broken:

OUR CLASS RULES.

Yellow-safety spot.

Blue-detention.

Orange-warning from the teacher.

Purple-stay in and write out what happened.

Green-go to the principal.

Walk in the classroom-yellow.

Speak politely and quietly-orange and purple.

(Observation 23-4-93).

It seems that early in her multi-age experience Kathy was concerned with establishing a room in which harmonious relationships were fundamental and she became concerned when this was not apparent:

Kathy: I am getting really sick of Troy's behaviour. I have put him over in the corner away from the others. He is continually breaking all the rules. At little lunch and big lunch he is also getting detention and he can write out what he has been doing and what he is going to do about it. I feel he is really upsetting the harmonious relationships I am trying to develop. If this doesn't work I am going to send him to Helen (the counsellor) to try and work out what his problem is (Conversation 8-7-93).

RELATIONSHIP WITH PARENTS

The positive harmonious and interactive environment that Kathy sought to establish within the classroom also extended to the parents with whom she wished to share a positive and reciprocal relationship, as her account of the first parent-teacher night indicates:

Phil: How did you think the parent evening went the other night?

Kathy: Well I had nothing to compare it with. I was really nervous because I want to develop a really positive relationship with them. I had lots of mothers say how they enjoyed it. How they really liked the layout of the room, the way I had the semi-circle and I was not standing up in front of the audience. I was part of the group. They came and said how nervous they were. Well I was nervous. The parents said they did not know what to do. I hope now they will feel free to come and work in the classroom (Interview 24-2-93).

Shortly after this parent-teacher night Kathy attended a meeting for neophyte teachers where she again reflected on how she valued an open and supportive classroom, which seemed to be in contrast to other teachers who did not experience or enjoy the same reciprocal relationship with the parent body:

Kathy: Then there were some who had real problems with the parents and I just thought you poor things having to deal with that. I think heaps of the parents I have got are so supportive and I can have a good chat with them. Like I really

appreciate how they help in the classroom with the reading. I wish more would come in (Interview 27-3-93).

RELATIONSHIPS WITHIN THE CLASSROOM

It seems from the dilemmas that Kathy experienced and her concerns about relating well with the parents were not based on a need to gain control within the social setting of the classroom but rather on the need to establish a learning environment that emphasises care, support and quality relationships based on mutual respect for all those involved in the learning and teaching process. The need for cultivating such an interactive learning environment is implicit in the observations Kathy made when she reflected on her first two weeks in her multi-age classroom:

Phil: I would be interested to hear your first impressions of working in a multi-age class and any dilemmas you may have experienced.

Kathy: Well I must admit before I started I was really worried about getting thrown into a multi-age situation because of the challenge. Then after about the first week I was very stressed and tired thinking well how does it work. Like how do you go ahead with the planning? Then again I realised that the kids know what's happening, they know what to expect. Like the older ones, they know that if you are working with the little ones to go on with things. They ask each other a lot of things you know. After big lunch we have our reading time. A few of them teach the little ones to read which is really precious. I thought, you know, with the books they are pointing to words and teaching them things. That is really great because we haven't started that formally yet (Interview 26-2-93).

It would be reasonable to assume that Kathy's belief about the importance of relationships in creating an interactive learning environment allowed her to negotiate the first few weeks of her initiation into multi-age teaching and possibly beyond. She acknowledged twelve months later how significant her belief about relationships within the classroom continued to be:

Phil: In what sense are relationships important?

Kathy: The relationship between teacher and student is obviously important, that both parties understand each other's needs. However relationships between students are also very important; they need to be able to work together, help each other and not be afraid to ask each other for help (Written response 18-2-94).

LETTING GO

Kathy also acknowledged she found the notion of having an interactive classroom challenging, particularly where the ebb and flow of movement could be distracting and difficult. It was during the task of creating such a classroom that she initially found difficult:

Phil: What did you find hard to let go of when you came here?

Kathy: Sometimes there's a problem with noise. Just coping with productive noise. Sometimes you feel like there's not enough "on task" time because of the noise. However, look around and discover children explaining, questioning, discovering, sharing and most of these things are confidence boosters too! (Written response 26-8-93).

IMAGE OF THE CLASSROOM

These beliefs about the nature of the classroom that Kathy described were also reflected in the way she applied the image of “family” to her own classroom, an image that also provides an indication of the beliefs that she held about her role as a teacher in the learning process:

Phil: How does the notion of family grouping manifest itself in your classroom?

Kathy: The notion of helping each other (peer tutoring) is very important and children see by helping each other the whole class is better off than if the classroom activities are all teacher oriented. Also, every person is important and has something to offer the rest of the group because the teacher isn't the most important person.

In a family you would like to think that any problems that arise can be openly discussed and try to find a solution together.

The point of really knowing each other and understanding each other's needs is family oriented. The older children feel a real responsibility towards helping the younger members of the class (Written response 18-2-94).

Kathy noted that despite the behavioural problems she encountered, she encouraged a positive classroom environment that reflected a supportive and interactive ethos and one that appeared to be consistent with the later beliefs she held about relationships:

Kathy: I really enjoy working in this class. I think it is just the kids, this class in particular. I mean other teachers have said it too. The kids are very supportive of each other and of me. Like you will get children coming up. Liam came up to me this afternoon and showed me something and then you get all the sticky beaks that come up and look. Other children would come up and say, “that is very good Liam.” Or Natasha, she has major learning difficulties; they really encourage her and David too with all his problems. This morning too I really went off my nut at those three boys. It was so early in the day. I felt frustrated and I did not want to feel like that and little Jessica came up and put her arms around me and said,

“alright let’s forget, let’s start fresh again right now,” and she clicks her fingers. I hope really all teachers should be able to do that (Interview 17-11-93).

In the following description, in late 1994, Kathy also relates how she was drawn towards the image of a “garden” to describe her classroom as a place where individual differences and developmental levels could be recognised and catered for, indicating the consistency of her beliefs over the two years of the study:

Phil: What image would you like to use to describe your own classroom?

Kathy: I like family grouping, but Phil I thought of a nice image of the classroom through doing my “Culture of the School” unit at Uni. The classroom is like a garden. There are many different plants, some grow quicker than others, but they all have needs and are beautiful as they grow (Written response 3-9-94).

Kathy’s reflections on a classroom where all could experience respect and acceptance appear to be consistent with her belief about the nature and purpose of schooling, in which she sees pro-social behaviour, including conflict resolution and mutual respect in a family environment as important:

Phil: I was wondering what you see as the purpose of schooling and how it is linked to the kind of society you would like to see develop?

Kathy: How I see schooling? Yes, well not just teaching of knowledge, basically, which is what I think has everything to do with output. I mean so many people still believe in reading, writing and arithmetic. You know you hear talk shows like 4BC and all that, people ringing up wanting to know what happened to the good old reading, writing and arithmetic. I do not know what they expect. What I think is really important the children have also to learn how to get on with each other, how to cope with arguments and dilemmas in their friendship groups. That has all got to come into the whole teaching classroom.

Phil: How do you think that is manifested in your classroom?

Kathy: Well I think the time I have them in the morning in my class is really important. How we all sit down and have a quiet time. They can come and talk to me about anything and we often sing a song. I think that is a real friendly start to

the day. Although you may have some who come in a real mood or whatever, I think that that kind of environment really does something for them. I think they feel it is their family (Interview 26-3-94).

BELIEFS ABOUT SCHOOLING

Kathy's beliefs about the nature and purpose of schooling are also closely linked with her belief about the kind of society she would like to see develop. Once again there appears to be an emphasis on a society in which the students are being prepared for socially responsible use of their talents and attainments:

Kathy: I would love to see a society of well-adjusted children who know their strengths and weaknesses and can use them accordingly in society. Where they have self-confidence to rely on themselves, but be willing to ask for help if needed. I would love to see adults open up more to the problems and needs of our children and see what they have got to do with them. Schooling gives the children a lot of opportunities to firstly communicate and build confidence with peers and classmates. I hope my classroom especially helps children to know their weaknesses and strengths and not just if they are right or wrong (Written response 12-5-94).

Kathy saw the kind of society she would like to see develop being enacted in a practical sense in her multi-age classroom when she used the image of "harmony" to describe one interaction that took place:

Phil: How would you see your multi-age class develop?

Kathy: I would like to see harmony. One of the things about multi-age is that watching today a girl in my class who is in her second year, and she was so shy and still is, but she has opened up and she is really good friends with Carissa. Just because there is a year between them does not matter when they are together and they have really sort of opened up and welcomed and Carissa has had the opportunity to see just because Belinda is older doesn't mean she is better in everything. There can be ones who are. What am I trying to say, in the

multi-age class there will be people there better than you are that you can help as well and that is the way it is going to be in everyday of your life (Interview 9-11-94).

KNOWLEDGE BELIEFS

Kathy's belief statements on what constituted important and worthwhile knowledge reveal that she espoused an amalgam of ideas which remained relatively consistent over the two years of the study. Kathy recognised that the knowledge construction process takes place in individual contexts through social negotiation, collaboration, experience and reflection. As will be seen, at times she noted that what is learned is determined more by the children's interests than the syllabus documents and that children best acquire knowledge as they construct meaning in a socially supportive environment, and that when they learn is determined by their readiness for the ideas rather than the age/time dictated by the syllabus documents.

Early in her first year Kathy was confronted with the dilemma of how to cover the knowledge content contained in the graded syllabus documents during her first co-operative planning session with the teacher-librarian:

Phil: Did you have any idea about what you were going to plan for when you had the session with Steph?

Kathy: When I went up to the library I was really hung up on the syllabus documents. Like I had all the social studies, science and language documents but I really didn't know what I was going to do. It was a bit of a mess really. I was not going to do nursery rhymes at first. Then Steph said that because I was fresh from Uni I seemed to be really hung up on the content in the syllabus, which I suppose I was. She then suggested that I do a language-based unit and that why not try nursery rhymes.

Phil: Do you think it will change the way you plan?

Kathy: I think so. I think I am getting away from get out the syllabus, what can I do to follow the syllabus? Steph has calmed me down a lot. Yes I thought of it like that. I have got to get through all of this, O.K. I have to look at one, two or three syllabuses, but I am alright now (Interview 20-2-93).

It seems at this early stage of the year Kathy may have understood the syllabus as a pre-determined set of resources and content to be learnt, but was also open to the belief that the syllabus documents had more to offer as her following comments suggest. Her willingness to explore the use of higher order thinking skills, for example, signals Kathy was beginning to realise these skills provided a way of engaging students in dealing with the content in a thoughtful manner. She was also prepared to use learning centres where work related to a particular content area and skills was organised:

Phil: How did the planning and implementation go for your nursery rhyme unit ? Was it at all useful?

Kathy: I think it was. I am not really sure. I found the higher order skills down the side most useful. I really have to concentrate on those. Writing up all that enhancing and orientating stuff was a bit confusing. You are using that all the time in the classroom and it is really hard to put it into boxes. The most useful part other than the thinking skills is getting all the learning centres planned. Now that is really good. You can see I have put a lot of them up and the children have started on them (Conversation 11-3-93).

BELIEFS ABOUT WORTHWHILE KNOWLEDGE

Kathy it seems from her following comments experienced some challenges to her understanding of what constituted important and worthwhile knowledge. Her beliefs about what constituted worthwhile or important knowledge were influenced in part by her early experience in the multi-age school. This experience seem to alert her to the broader understanding of what constituted worthwhile knowledge, thus avoiding a total reliance on subject or content knowledge. As she explains early in 1993:

Phil: The next question I would like you to consider is what you think is worthwhile knowledge?

Kathy: Like I have said before, had I been in another school and not a multi-age one, I would have been thinking subject knowledge is worthwhile. I think in my class knowing each other's limits is important. Not only knowledge of children but my understanding of myself, what is going on in me. Also knowledge of where all the children are, not what they can do so much. I do not know how to put it.

Phil: Are you talking about relationships?

Kathy: Yes, that is more important to me than whether they can spell (Interview 28-3-94).

It could also be proposed that changes in her beliefs about knowledge were facilitated by her existing relational beliefs, as the two belief positions are interrelated and interdependent. Her comments two months later indicate that she continued to understand that the students best acquire knowledge as they construct meaning in a socially supportive environment:

Kathy: Most knowledge children have is worthwhile to be shared with others to learn from. Other children love to hear their friends sharing information or something they have learnt or know about a topic. Knowledge is not something owned by the teacher but must be shared, although the teacher must be able to organise knowledge for the students when needed too (Written response 24-5-93).

And later in her first year in the school:

Phil: What is important knowledge for you?

Kathy: To know how to communicate with the others is very important, how to interact with the members of small and large groups, socially and cognitively. To know how to achieve in class - if I get my work done I can complete other tasks. Basic skills to assist further learning - plenty of opportunities to be read to, to

have a go at spelling and discuss language features. How to problem solve (Written response 26-8-93).

In a response at the end of her first year in the school, Kathy further elaborated how she understood the importance of creating a classroom in which knowledge could be shared:

Phil: What do you think are the cognitive and affective benefits of multi-age?

Kathy: It's easier for you to let the children progress with their work, especially written tasks. The working atmosphere of the classroom, the discussions, even questions get the minds thinking and stir up the search for knowledge. The working classroom is a cognitive benefit in itself. The younger members of the class hopefully see the benefits and learn knowledge and how to be co-operative, how to communicate with their peers to get help, ideas and therefore everyone benefits by the positive outcomes (Written response 5-10-93).

INTEGRATING ACROSS THE CURRICULUM

Kathy also identified the need to integrate across the syllabus documents so that content area distinctions are blurred and the various disciplines overlapped, allowing for skills, knowledge and attitudes to be reinforced within and across these disciplines. Her following observations took place after a neophyte teacher meeting where her ideas about integrating caused some questions among her peers:

Kathy: I told them that I have just finished a nursery rhyme unit and now I was going to move onto zoo animals and they all wanted to know how that fitted into the syllabus. Well I tried to explain that like nursery rhymes was language and that with zoo animals I could draw on the science syllabus. I am going to move from this unit into caretakers in our community and then I will be able to use social studies as well as language (Interview 27-3-93).

Later in her first year Kathy explained the benefits for her of integrating across the various subject areas within the syllabus documents and also acknowledged that working within a multi-age school had heightened her awareness of the need to do so:

Phil: Do you follow through with the syllabus documents when planning your work?

Kathy: Not as much as I think I would have at other schools and a lot of my friends are saying I should have taught this and this by now and I have said, "Who says so?" "Oh my principal laid down the law about when I have got to have this and this taught by." I think that is really a shame because they are not thinking about the needs of the children, they are just following orders. Also it does not allow for integration. We only learnt about integration in the last semester of Uni and really for multi-age you need to have a good knowledge of integration. Most of the time it comes naturally anyway: you do not realise how you integrate. It is really good for the kids too. In an activity or exercise they might be doing some measuring, so it is a bit of maths and sometimes science and that is good. If they are integrating all the time I think it can stop them developing bad attitudes towards those subjects. I know that when I was at school, it was science on Tuesday afternoons and I really got to hate it (Interview 4-9-93).

The way in which Kathy integrated across the curriculum, used higher order thinking skills and introduced learning centres to promote student choice and responsibility was evident in the unit of work she planned on the theme "The Zoo." Kathy choose this topic as she saw it as a way of investigating the interactions between people and animals and between natural and built environments. Her planning outline had the following:

FOCUS QUESTION:

How do animals live in zoos and in their natural habitat?

CONTRIBUTING QUESTIONS:

- *What environments do zoo animals live in?*
- *How do animals use their body covering to help them in their everyday life?*
- *How does and animal's teeth shape and affect what foods they eat?*

- *What body parts help in the way the animals move?*
- *How do animals interact with humans in the natural environment?*

Kathy also highlighted the higher order thinking skills she intended to use in the learning centres and other pre-planned activities on a checklist drawn from Bloom's Taxonomy.

These included:

- *Interpreting*
- *Comparing and contrasting*
- *Investigating*
- *Categorising and classifying.*

A contract was also drawn up for the students so that when an activity was completed they could make their own evaluative comments along with those of the teacher. These activities included:

- *Write an acrostic poem for a fish.*
- *Plant or animal classifying*
- *Map it. Make a tourist map for the zoo.*
- *Rainforest camouflage. What is it? List animals.*
- *Search for syllables.*
- *Herbivores. List animals (Observation 26-5-93).*

KNOWLEDGE CONSTRUCTION IN THE CLASSROOM

Kathy described a typical classroom situation to explain her belief that knowledge is socially constructed and context-dependent and learning is often most effectively accomplished when the students have the opportunity to build knowledge with others:

Kathy: Just then when Norma (relief teacher) came in she said, "Well everyone is getting on with it." I had children doing learning centre work, some were helping others with reading so they could get on with it. There is no way some of the second years can do a learning centre on their own, but the others were reading it to them and showing them how they might do it. Then I had Sam

making a sound book and he was having difficulty again and someone Jessica was helping him. Little ones were tracing this and doing that, but everyone was learning and helping each other and it was all going on at one time and it was good. I did not want to leave it (Interview 26-3-94).

In explaining her knowledge beliefs Kathy highlighted the importance of linking them with her beliefs about how individuals learn and construct meaning:

Kathy: We all construct meaning in different ways and so with a class of twenty nine children you have to be flexible enough to help and assist these many ways of constructing meaning. The children will do this by reading material, by discussing, through questioning and through silent reflection (Written response 24-6-94).

BELIEFS ABOUT TEACHING/ LEARNING

Kathy's focus on an interactive approach to knowledge construction by individual learners, which recognises the importance of what students need to know and how they go about it, is further explained when she describes the need for creating developmentally appropriate learning environments that challenge each student's emerging knowledge base. An emphasis is also placed on the teacher as a facilitator of learning:

Kathy: Each child is really an individual in a family grouped classroom and this influences learning. The purpose is to establish concepts and knowledge at the time when each child is ready and able to cope and if children are not ready for a concept all at the same time, the children who are not ready are not labelled (as slow etc). The idea isn't so much to teach on time but to teach when there is a learning need (Written response 24-5-93).

A theme that repeatedly appears in Kathy's story is one of a person who is intent on providing a nurturing learning environment so that individuals can develop at their own rate. This theme was also evident within Kathy's knowledge beliefs where she believed

she was aware of the learner's levels of development and attempted to respond accordingly. Kathy elaborated in early 1993 what she considered as being the characteristics of a supportive and challenging learning environment:

Kathy: Where children feel at ease to discuss and query, ask and retell, whatever they need to learn best. Provide opportunities for group work both teacher instructed and student led, for one to one assistance, for class discussions, for peer tutoring and self instruction - enthusiasm for self to work and achieve at one's own pace (Written response 26-5-93).

Kathy expanded on these beliefs about learning when she responded to the following:

Phil: How do worthwhile partnerships develop?

Kathy: For teacher and student partnerships you have to try and get the child's trust. Encourage them to have-a-go and that being wrong isn't a bad thing. Similar with student-to-student partnerships you have to encourage the children to praise on another and not to make fun of one's achievement or work (Written response 26-5-93).

However, as Kathy was to point out on a number of occasions, it was not her multi-age classroom that developed these beliefs because she brought these with her and thus did not see her approach as exclusive to a multi-age environment. The following comments were made in late 1994 and indicate the consistency of her beliefs about teaching, learning and social relations over the two years of this study:

Phil: What do you think are the key elements of a multi-age structure?

Kathy: Not only of multi-age but for all situations where people come together to learn; that we are different, we construct meaning in a different way, therefore we should be treated individually. Co-operative learning. In any classroom, it wouldn't be fair to expect that all children will learn to their capacity simply by teacher- orientated lesson. There must be opportunities for discovery learning and inquiry (Written response 3-9-94).

A VISIT TO THE CLASSROOM

The following visit was made to Kathy's classroom midway through her first year as she implemented the unit on The Zoo:

The session after the mid-morning break started with a relaxation session. Kathy had the students find a space on the floor where they would not be distracted. Appropriate relaxation music was played. During this time Kathy set about finalising material for the art centre, where the students had the task of following instructions to make a mobile of sea creatures. At the end of the relaxing session Kathy called all the students to the front of the classroom. She then proceeded to explain that they would be going onto their contract work. She stressed that it was important they finish the learning task they were already on, rather than rush to a new one, such as the art activity. Kathy also reminded the students who were working with the teacher librarian to take their research booklets with them. She asked Katie to bring hers up so that she could share with others what they were doing. The research booklets had been designed by both Kathy and the teacher librarian. It was noted that Katie was doing her research on the wombat. Katie showed the class how she had filled in the drawing of the wombat on the first page of the booklet with some key words describing the wombat. She had then put these key words into sentences below the drawing on lines provided. The next page was a map of Australia and Katie explained that today she was going to look up where it came from. It was noted other students had research booklets on snakes, the kangaroo and the crocodile. Kathy stressed to the research group that they were to work independently and to think about ways they would present the information to the rest of the class. She also noted that this completed activity would be put in their assessment portfolio. The remaining students were told that they would also have their turn at learning about research skills and were then directed to move onto their learning centres. It was noted that some learning centres had a red dot on them. Kathy explained that these were ones set aside for the younger students, particularly the wombats (first year students). Jamie began to work on activity called "Hello Kangaroo" which involved reading some information and then completing a cloze activity. Susan was at the listening post activity where she had to listen to a traditional aboriginal legend about why the kangaroo hops and then complete a series of

questions. Three students worked at the art centre making an animal out of egg cartons or completing a mobile. During this time Kathy walked around the room talking with the students, asking them questions about what they were doing or marking their completed activities when they brought it up to her. Jake showed her the acrostic poem he had written for the word "fish." Kathy noted on his contract sheet that he had interesting words but. "Spelling mistakes affect the poem. Please fix them up so it is a really smart poem." At one stage Kathy sat down with a group of three students who were making a tourist map for a zoo and questioned them about what they were doing. After forty five minutes Kathy called the group together and thanked them for the very effective way in which they worked and was impressed with the way they helped each other (Observation 11-8-93).

KATHY'S IMAGE OF HERSELF AS TEACHER

Consistent with these beliefs about teaching and learning Kathy saw herself as a teacher who understood teaching to be a process based on nurturing, guiding, facilitating and reciprocal interest. The image Kathy provides to describe her role as a teacher is that of "a key":

Kathy: You are like a key, you open doors for them. There is no way you can teach them all they need to know. You are there just to help them, like I said, the key to open the door for them. Do you like that? People say to me, you do not really sound like a teacher, you sound like you are guiding them to do things, you are not teaching them (Interview 4-9-93).

This image of herself as a key to opening the door on knowledge was also to appear in a number of later interviews with Kathy:

Kathy: Being a teacher in a classroom to me is being, I think I said this before, you know everyone thinks a facilitator. I cannot think of anything else at the moment.

Phil: You cannot think of another image of yourself as a teacher?

Kathy: Yes I said before it is a key. I am like a key. All those doors you are opening. It is not an image of the teacher where you are stuck up the front teaching and the students sitting in desks learning (Interview 26-3-94).

RESPONDING TO LEARNING NEEDS IN THE CLASSROOM

It was important to Kathy that she provide a learning environment where she could be a facilitator and respond in appropriate ways to the individual needs of the students. She explained how she attempted to enact this belief in the practical setting of her multi-age classroom:

Kathy: First of all by knowing where the children are at. You have to know your children! Then take it from there, group work with same level abilities or on the other side of the coin, multi-ability groups so that peer-tutoring takes place. You need "helpers" who are mature enough to take responsibility for helping others. Don't let the syllabus be a barrier. If children are progressing let them progress, give them new and exciting challenging tasks while those who are perhaps a little slower or who are having trouble can be focused on to discover details of problems. Individualising in learning means exactly that in some areas, even if it means lots of work to go through each child's work and give relevant work (Written response 18-3-94).

Kathy's belief that teaching for learning is a task which includes an understanding of how to adapt the content to suit individual students and an appreciation of the links between process and content is further explained in her following response made in the previous year:

Kathy: I am continually observing and keeping anecdotal records. I'm finding the folio I keep of the children's work more and more useful. Like when I date work that show great improvement or show a child is having a difficulty. Sometimes too I find it really useful to ask the children what is something new or different you have learnt today. I think it is really important to ask them what they are enjoying or having difficulty with. Also letting them be open with you and each

other and letting yourself be open with the class...yes I suppose I am monitoring continually, looking at what is working and who needs more work. Also another thing is what processes and skills the children are using (Interview 1-9-93).

BELIEFS ABOUT ASSESSMENT

The image of her role as a “key” in the learning process shaped Kathy’s action within the classroom. Her interactions with the children were imbued with the notion of working co-operatively so as to find out what they know and how to adapt the content to suit individual students. These beliefs about teaching and learning also were evident in the way Kathy approached the task of assessing the students:

Phil: What do you think is an important consideration when assessing students?

Kathy: If the children never had the chance to ‘share’ knowledge and to talk about what they know or can do, chances are parts of your unit/teaching will fall flat. Assessing attitudes would be interesting. Old style teacher-learner situations make learning uninteresting and short term.

Ask them what they’re enjoying, having difficulty with - letting them be open with you and each other and letting yourself be open with the class (Written response 17-6-93).

And at the beginning of her second year at the school Kathy’s comments indicate that she continued to believe that assessment needed to be student-referenced:

Phil: What is important to assess?

Kathy: Behaviour and communication, that is being able to work individually in groups. Also the processes the children use. For example spelling is a process and often spelling is a great barrier to children completing work confidently.

Phil: How do you actually assess?

Kathy: Being a “part” of the classroom activities and observing what’s going on. Writing notes on communication and social behaviour. Take examples of work to keep to help remember progression/regression of work (Written response 28-3-94).

Kathy's beliefs about assessment reflect the emphasis she places on learning with understanding and the need to demonstrate growth in understanding in appropriate tasks. As Kathy noted, this information was gathered through continuous assessment using students' regular work, portfolios, practical tests, school based assessment and self-assessment by pupils. Kathy used the feedback from these sources to find out not only what the students could do but also what they could do. The following comments were made early in 1993, indicating that Kathy was comfortable with this approach to assessment:

Kathy: I am amazed at just how quickly you catch on to where the children are at and what they can do. I have found the school developmental records useful. I thought it would take me ages to get to know the children by using this method. However I can quite easily tell anyone about all the children in my class, what they can do and can't do (Journal 28-2-93).

CHANGE BELIEFS

Interconnected with Kathy's beliefs about teaching, learning and social relations was her belief about the content and process of reflection and how it assisted her to analyse and resolve issues about her own practice and its effect on particular students. The need for reflection on her relationships with the students was acknowledged earlier in this story when Kathy outlined the important elements of worthwhile knowledge. Kathy explains how she approached reflection mid way through her first year in the school:

Kathy: I reflect about challenges I have faced all the time. Multi-age is great I think, especially if the child had been here since first year. For those who have not I have realised they need more direction and guidance, like I do because I am new too. Sometimes the 'openness' of the classroom can be overwhelming and I need to change the way I teach. For example recently I had to stop all group work and start direct teaching, with them all sitting in silence. I am happy

though with the way my teaching has come along and I respond to their individuality (Written response 17-6-93).

During her second year Kathy noted how she still continued to reflect but that the reflection was a continual process:

Kathy: I never reflect on my teaching at the end of the day as such. Obviously I write down if something does not work and I will never do it again, or if something goes well do it again whatever. I do not sit down at the end of the day and say I thought I asked some really good questions today, like we use to do at Uni. Reflection is ongoing (Interview 26-3-94).

To assist with her reflections Kathy started a journal of which she made constant use for recording her observations and comments on individual students and her relationship with them:

Phil: How do you resolve contradictions, problems or dilemmas that arise?

Kathy: This might be a little bit off the track, but I have started keeping a journal this year. I really did not have time for this last year. I scribble things down and go back and write it in later. So far it has been helpful to go back later and read what I have written. And even like something that is not working. Like I said we have our rules and I have been keeping some back during little lunch if they have not completed enough work. Well that is not working for some of them. Like Theresa's problems are past that, she is not doing work because there is something else going on with her. I have dated things With some children you have to try and find out new ways all the time for working with them (Interview 26-3-94).

The following is an extract from the journal:

June interview- expressed concern to Mum about Belinda's direction following. She gets easily upset and confused and thinks she can't do certain tasks. See Kerry (learning support teacher) - did some assessments can follow cognitive

directions but has problems with social directions - gets flustered. I will have to be careful. Mum thinks B just wants to please and gets upset if she thinks she can't.

9/8. Knows vowel sounds. Blends with b, t, p, n, s, f, m, g, d. Confused n with u. (Observation 9-9-94).

Kathy's belief about the nature and purpose of reflection focus not so much upon the products of the learning situation as upon the meaningfulness of the learning experience for the student. Kathy was prepared to question her own practice and look beneath the surface of the product to the student for whose interest and well being the practice exists. Put another way, the purpose of reflection is to create a more humane, creative and interactive context for teaching.

IMAGE OF THE CURRICULUM

The set of interrelated assumptions Kathy held about relationships, knowledge, teaching and learning and the process of change were encapsulated in her description of the curriculum. The dominant curriculum concern evident in the following definitions focuses on the experiences of the whole child both arranged and accidental, through which learning occurs and through which subsequent experiences may be organised:

Phil: How would you define the curriculum?

Kathy: What a child learns/has learnt through doing the right thing or from mistakes (risk taking). This is what they learn about themselves, their abilities, capabilities and morals. Through indoor and outdoor activities - sport and art work etc give the chance for success as well. Curriculum develops the whole child (Written response 24-6-93).

A further response twelve months later reveals the same beliefs about the curriculum:

Kathy: Everything that a child learns about while at school. Not necessarily in the classroom. Not only knowledge and skills but behaviours, relationships, how to communicate and think critically....everything (Written response 11-8-94).

ONGOING CHALLENGES

The question remains as to how Kathy actually went about the task of organising her multi-age classroom so that there was consistency with her beliefs and practices. In particular how did she use the multi-age approach as a strategy to promote more individualised work with the children? Concomitantly what challenges did implementation present her and how did she proceed to reconcile them? As shall be seen, even though Kathy found the notion of multi-age appealing, ambiguities and contradictions occurred in the way she organised the classroom to cater for the needs of individual children. An early indication of how she went about operating in her classroom is contained in first reflections on working in multi-age. The following entry in her journal reveals the dilemma she had in attempting to remove the notion of grade levels:

Kathy: I have found that teaching in a multi-age class really requires me to still teach at different levels. Because the class is a 1/2/3 multi-age classroom the children find it hard not to separate themselves from their classmates, eg., when I am preparing some worksheets perhaps children will come and ask, "Is that for grade 2's or 3's." I am really trying to do away with the children calling themselves grades. I have made two main groups WOMBATS (first years) and KANGAROOS (second and third years) (Journal 8-4-93).

On a number of visits to Kathy's classroom over two years it was possible to see how she used the different groupings she had established in the class to teach various concepts:

The group had gathered on the floor for the morning session. When selected students had finished their input, Kathy said, "Third years I want you to move over to the sound centre. Second years you can work on the learning centres. Wombats I want you to come and work with me on the floor and please bring

your scrap books.” The various groups then moved off to their various allocated tasks. Kathy had all the wombats on the floor with their scrap books and then proceeded to give them out a series of worksheets. She explained that they would be doing the letter s. Kathy then asked the group for words that started with the letter s. These were written on the board. Kathy also asked the students to put these words, orally, into sentences for her. Those with their hands up were asked to do so. After twenty minutes Kathy explained the activities that were on the worksheets and then asked them to go on with them. Kathy added, “If you have a problem please go and ask one of the Kangaroos. If they don’t know, which they shouldn’t then come and ask me.”

Whilst Kathy was working with this group, the remainder of the class proceeded with their allocated activities. The third years worked around the sound centre that Kathy had set up in the corner of the classroom. It contained various activities with blends such as th, sh, and ch. The second years were working on activities based on the theme entitled “Heroes.” There were eleven different learning centre activities. During this time several examples of peer tutoring were in evidence as students conferred with each other concerning aspects of the activities.

When Kathy had finished working with the Wombats, she started to move around the room checking with individual students. During this time she mentioned to me how some visiting teachers had commented on how well the children worked and how they helped each other. When I asked Kathy why she thought this was so, she responded, “I don’t know, it is the environment they are working in. I am really pleased the way they work on their own and the way they help each other.

At the end of the session, Kathy called the whole group together to listen to a reading from a shared book that she had selected on the theme of Heroes (Observation 13-6-94).

Even though there was an emphasis on individual students progressing at their own rate, this was understood by Kathy as being carried out within a year level or ability framework. As she was to note after nearly two years of working within multi-age:

Phil: What have you found hardest to let go of?

Kathy: I suppose letting go of comparisons within the same age barriers is still and ongoing challenge. I find that especially hard with the first years, but I know that will all come together when they are ready. It is a maturity thing (Interview 26-9-94).

And again in response to the following question:

Phil: How do you individualise learning within the classroom?

Kathy: First of all by knowing where the children are at, you have to know your children. Then take it from there, group work with same level abilities or on the other hand multi-ability groups so that peer-tutoring takes place. (Written response. 18-3-94).

MULTI-AGE AND THE SYLLABUS

However Kathy also noted that, even though she tended to operate on a grade level or ability structures, this did not necessarily imply that they were restricted to the knowledge that was contained within the syllabus for the year level:

Phil: Do you find that you have an interpretation of the grade levels that says because they are in a particular grade they should be proficient in certain areas?

Kathy: Actually it was funny because last week and this week I started pulling out my kangaroos, my two's and three's and seeing where they were at with the multiplication concept. I was doing it with two and threes and maybe some of the threes did not understand the concept of turn around and things like that and the twos did know. When I have said this to some of my teacher friends, they say to me, "You know you are not supposed to introduce multiplication to twos and threes." I tell them it does not matter with these children, they are ready for it. There is no point in holding them back (Interview. 27-3-93).

The idea of the students progressing at their own rate free of the constraints of time -tabled growth became a consistent part of Kathy's belief system:

Kathy: Don't let the syllabus be a barrier, if children are progressing let them progress, give them new and exiting work while those who are a perhaps a little slower or who are having trouble can be focussed on to discover details of problems(Written response. 18-3-94).

CONCLUSION

After working in multi-age for two years Kathy was asked which of her particular beliefs she considered had changed or were in the process of change. Her following observations capture the affinity she felt in working within a multi-age structure:

Kathy: Actually I myself feel very adjusted to the openness of family groupings. I would probably find it difficult to go to a traditional classroom. I suppose being open to the kind of work that children are doing during the day, it doesn't matter if one child hasn't done any maths all today. If they have to spend a little bit longer on some sort of writing exercise that they are doing that is fine. It is obviously what they need rather than making sure they have got this and this done. I suppose the idea of using group work has been reinforced too. Like using group work for opportunities to communicate with each other and peer tutoring and me listening to the ideas of children and letting them be a part of the planning (Interview. 6-11-94).

TONY

INTRODUCTION

Tony came to St Clares after working for eight years in a conventional primary school. His motivation for coming was for convenience of travel, rather than for any philosophical reasons associated with a multi-age approach to education. In the initial interview with myself he expressed an interest in working with older children and did not see any major difficulties making a transition into a non-graded structure, “as I have done this group work stuff before.” The group that Tony was initially given had students ranging in ages from nine to twelve (grades four to seven). However within the first two days Tony requested that the younger students be moved, as he considered the prospect of teaching such a wide range of ages daunting. This having been arranged he then felt that the age range he had (ten to twelve) was manageable and did not see any major inhibitors to successfully implementing a multi-age approach.

However, within the first two weeks he began to experience a number of dilemmas as his beliefs clashed with the challenges provided by his multi-age class. One significant area of tension was caused by his dependence on syllabus documents to define and fix the content knowledge to be taught to a particular grade level. This in turn created dilemmas about the groupings that should be used to organise the students. As Tony began to reconcile the conflicting demands of multi-age groupings, a change began to appear within his approach, from one dominated by the teacher, to one which focused on the individual student as a learner. This shift became evident as he focused on issues concerned with the use of processes and skills rather than syllabus bound content knowledge, the nature of relationships in the classroom and the role of assessment in grading and labelling students. The following table highlights the changes Tony made over the two years of this study and the importance of his knowledge beliefs in the process of change.

BELIEFS	EARLY 1993	LATE 1994
Self	confused, to make a difference, friend and companion, to be an expert teacher	to make a difference, friend and learning companion
Relationships	respecting individuality, nurturing self-esteem and dignity, allowing students to be themselves	Sharing power in the classroom, respecting individual needs, interactive and nurturing
society and social justice	school is to help students to find a place in society according to abilities	help change society, system needs to be questioned: 'what is average?'
Knowledge	focus on content syllabus-bound knowledge, knowledge is external to the learner, based on skills and information	is socially achieved, continually expanding and changing, prior knowledge important, process as well as product
Change	ongoing desire to change and improve, ongoing reflection with self and others, self knowledge	Ongoing desire to change and improve, ongoing reflection with self and others, self knowledge
Teaching	direct, focus on delivery, giving accurate information, structuring the learning environment	facilitator, supporting learners' activities, helping learners reconsider, image: teacher as a catalyst
learning and learners	is receptive, a receiver of transmitted knowledge, passive, correct performance of a task	Learning is an active process, the learner is an active constructor of knowledge, learning is personal understanding
Assessment	reproducing material, testing of propositional grade-based knowledge	descriptive, evidence of individual growth, student-referenced
Curriculum	prepackaged set of resources and learnings, image: covering the syllabus	Concepts, physical, social and intellectual skills, child responsive, adapt content to suit individual needs

KNOWLEDGE BELIEFS

Tony's early observations and dilemmas about the what of knowledge and the how of learning highlight an approach which was primarily teacher-centered with a heavy emphasis placed on the transmission of knowledge contained in the graded syllabus documents. Tony understood the syllabus documents as prepackaged sets of resources and learning which determine and fix knowledge content according to particular year levels, leaving little room for flexibility and individualisation and negating students' self-selection of content. It may be inferred that Tony's belief about the nature of knowledge was that it was relatively stable and external to the learner, could mostly be described as skills and information in the form of facts and concepts and could be prespecified in outcome terms that are easily tested. Learning, as a consequence, could also occur in observable and predictable ways that could be made more efficient through systematically controlling the learning environment. However over the two years of this study it became evident that Tony was able to successfully negotiate the concerns that he had about the construction and reconstruction of knowledge.

His new approach engaged the learners in activities, which do not necessarily depend on the authority of the teacher to determine, and which challenge them to construct new insights and understanding. Within this perspective, emphasis is placed on the prior knowledge an individual brings to a learning situation and this knowledge can be reconstructed and reinvented either in conjunction with others or largely unassisted. Tony, it seems, had made significant moves towards this new orientation as he attempted to redefine his understanding of syllabus-bound knowledge and the way it was to be transferred to the students, indicating the interdependency of beliefs about teaching and learning. Within this approach the teacher is understood as being a mentor or facilitator (an image used by Tony) who organises learning opportunities to allow the students to achieve autonomy. The syllabus as a consequence is not something that is static but is sufficiently flexible to allow for the teacher's expanding knowledge of the students.

EARLY DILEMMAS

The challenge of confronting a multi-age classroom began to reveal itself to Tony within the second week of school, after he had firstly negotiated the settling in period of week one, and eliminated the perceived difficulty of working with children across four grade levels. As Tony noted, he brought with him a personal biography that was strongly influenced by his pre-service teacher training and his eight years of teaching within conventional primary schools, significant aspects of which were at variance with the school's philosophy. One significant dilemma was caused by the dominating influence of the syllabus documents and the content knowledge contained in it. As Tony explains:

Tony: The thing that I am really worried about is covering the syllabus, but that was a concern for me because I have been doing it for so long. I immediately worried that by the end of grade seven we should have covered this and this best (Interview. 1-3-93).

The image of "covering the syllabus", and the demands this placed on Tony in a multi-age class continued to be an ongoing one, as he explains six months into his first year:

Tony: The biggest dilemma I have is being reliant on curriculum and knowing you do this at such and such a time and year six you do that and then having that sort of not there, hardly there so to speak. Now I am not sure what I am suppose to cover. I have never had to do this before. I have always had a book that says what I have to do. You picked it up at the beginning of the year and you worked your way through it and you ticked everything off, that is just the way things were done. That is the biggest dilemma I have coming to terms with (Interview. 1-6-93).

Tony also found the multi-age philosophy which emphasised the significance of individual developmental rates, particularly with the acquisition of knowledge, clashed with his perceived task of preparing students for secondary schooling. He considered it his task to ensure that the students were equipped to work within an educational culture, which was

dominated by content knowledge, and as such he felt duty bound to cover all the content contained in the syllabus documents. However, at the same time he also acknowledged that pursuing such an approach to knowledge would result in failure for a number of students and a lack of understanding with others:

Tony: One thing about these groupings is that time is supposed to be on their side to develop. I can see that, and I can understand that to a certain stage. Like you know until a lot more schools adopt this system, we have to outfit these children to go through the rest of the system. When they leave us they still have to cope with a content-orientated high school curriculum.

Phil: In what way are they left behind?

Tony: Across the board really, and as I said, if they were in the traditional system chances are they would be in the same position. The thing I get from high school teachers is, "Oh well we want them to read and we want them to have basic maths." So sort of having a look at the traditional system, at the end of year seven you have got your curriculum there, and at the end of the year they will have done this and this. All of them would have done it, but most probably only fifteen percent would have understood it, but they would all have at least seen that (Interview. 1-6-93).

As well as the concern over whether multi-age was providing an adequate knowledge base to equip students for the rigid subject oriented approach of high school, Tony also expressed the concern about whether the multi-age approach was consistent with the lock-step expectations of society, or the process of "jumping through hoops":

Tony: The way society is now we just have to jump through hoops at certain times, and you can either see that as a barrier and I am going to stand up against this, and it might take many years to get through these barriers. Sometimes it is just easier not to go through the barrier, although all these ideas we talk about where the children are concerned with multi-age are great from our point of view, but maybe we are not doing the best thing for the kids because from society's

point of view that is not how it works. If society is jumping through hoops, then that is what we have to make them be able to do (Interview 1-6-93).

A manifestation of this need to be able to “jump through the hoops” arose with the issue of testing. Tony experienced difficulty in coming to terms with a multi-age system that appeared to move away from an emphasis on testing as a means of measuring the content knowledge or the “product” that had to be learnt from the graded syllabus:

ony: When you first start to work in multi-age because you are so used to testing work, you are just so used to that. It is different to the old product approach. Here we are at the end of the year and I have got to write a report card, so I had better do some tests and find out where the kids are and what they can do. It is different to the old product approach (Group discussion. 18-6-93).

INITIAL RESPONSES TO THE DILEMMAS

Tony’s initial response to the dilemma of having to cover syllabus content knowledge over three distinct year levels was to organise the syllabus documents on a yearly rotational basis, as he notes:

Tony: ... having the three levels I immediately locked into the year seven syllabus, which sort of appeared to work for a little while. My concern was if I locked into the grade seven, then next year did the grade six and the year after did the grade five one, then by that way by the time the kids were with me for three years they would have covered the whole lot of it (Interview. 1-3-93).

It soon became evident to Tony that the dilemmas he was encountering in trying to cover the content knowledge in the three distinct syllabus documents needed to be addressed, as he was rapidly losing direction in what to teach, how to approach the organisation of the class and a “basic standard” for each student to achieve by the time they finished primary. As he notes after six months in his multi-age class:

Tony: We need to come up with some kind of statement of what we need that is worthwhile knowledge to teach and aim towards that. I just sort of feel sometimes that I have not got a goal. That I was just sort of teaching and I do not know what and I do not know where I am going.

Phil: Is that because of multi-age?

Tony: Probably, because all that structure has been taken away (Interview 1-6-93).

The conflict that Tony was experiencing in trying to reconcile the demands of the graded syllabus with a class organised on a multi-age basis, was evident in the way he approached classroom practice. His image of “missing the mark” and his attempts at determining the “ability levels” of the students signalled his confusion over what was worthwhile knowledge for the students to learn, now that the structures which had driven his practice appeared to be absent:

Tony: I do not think I am getting to a lot of them. I mean I am probably covering a fair few of them but I am not getting to all of them.

Phil: What do you think you are doing that stops you from getting to them?

Tony: Quite a few things. You know like I am trying to aim a lot of stuff at those kids and they just seem to be missing the mark, so maybe I have not summed up their ability levels yet properly. I just sort of naturally assumed that most of them would be able to handle grade five standard work, but some of them can't and that has sort of thrown me (Interview. 1-3-93).

The challenge of trying to organise the groupings in the class on ability levels according to the content knowledge contained in a lock-step syllabus document or graded text book also provided dilemmas of a practical nature:

Tony: When I worked out the range of kids I realised it was not going to be easy, because I thought I would like have three groups of ten kids or something like that. Now I have realised that I am not going to have that, it will be more like ten groups of three with abilities. Like I have got kids that are in grade five, but that would really be grade four standard (Interview 1-3-93).

A visit to Tony's classroom at this early stage of his first year in the multi-age setting reflected the problem he was having in attempting to group the students according to his idea of ability levels based on traditional year levels:

Tony had positioned his own table at the front of the classroom. There were five groups set up around the trapezoidal tables. When asked how the groups were formed, Tony noted that group five was the "bottom group." This group consisted of four students. One student, Tammy, who was in her seventh year was in this group. However as Tony noted, "she is operating at year four, five level." The remaining groups were all organised around the year levels (Observation. 8-3-93).

CHANGES IN TONY'S APPROACH TO KNOWLEDGE

However rather than vigorously defend these beliefs, Tony found that he had to redefine and refocus his own beliefs in order to survive. As he notes, it was the challenge of confronting three different year levels and the content of the syllabus associated with them that acted as an initial catalyst for change:

Phil: Tony you have come into a multi-age setting and have changed aspects of your approach.

Tony: It would be hard not to. I cannot see how you could not change, unless you drove yourself mad teaching three different year levels. Like with me with five, sixes and sevens, the only way I could not change would be me teaching grade five there, grade six there and grade seven over and running a complete year program three times. I could not work that hard. I would not work that hard. Other than driving yourself into the ground you have to change (Interview. 5-6-94).

Once Tony had decided that teaching his class on a composite graded model was not going to work a notable shift began to emerge in his belief about the significance of grade level knowledge and indeed about the kind of knowledge that was most worthwhile for the students to learn. As he comments after twelve months in the multi-age setting:

Tony: What changes your way of thinking is the relaxation of the twelve months. In the traditional system at the start of the year it is a matter of, well, this year I have got to teach this, this and this. With that gone it is now a matter of what do these kids need to know. It changes the whole perspective of the way you look at what you are going to do, and then you start thinking about how are these children learning and I think that is what makes you change (Interview. 7-11-93).

It seems, at this stage, that the combination of external factors prompted Tony to question the beliefs that he held, particularly his presumptions about what constituted worthwhile knowledge. An indication of the significance of this belief and the influence it was to have on a possible shift in orientations is indicated in his following comment:

Phil: Have there been any changes in the kind of knowledge you think is worthwhile for the students to learn?

Tony: My ideas and thoughts in this area have dramatically changed by multi-age. In the traditional system I would have rarely asked myself this question because the syllabuses were there. However multi-age challenges you to think about this. There can be no blanket answer to this question as the individual student needs to be taken into account. This has always been important for me but now I can put it into practice (Written response 8-8-94).

Once Tony had begun to challenge his own belief about the nature and significance of the syllabus content knowledge he was transmitting in the classroom, a notable shift began to appear in the other beliefs he held about learning and his role in the learning process, demonstrating the possible interdependence of these beliefs. It is possible to gain an insight into these beliefs and how they changed by investigating Tony's practice as he began to fill the vacuum left by the dominating influence of the syllabus.

CHANGES IN APPROACHES TO TEACHING AND LEARNING

An important change occurred in Tony's practice when he adopted a 'thematic' approach to units of work. It is often the practice in primary classes at St. Francis for either the teacher or the teacher in consultation with the students to select an appropriate theme or interest to study. This can be either as a unit of work taken directly from the syllabus documents or from a topic that is of interest to the students. A particular focus is given to the processes, skills, beliefs, attitudes and concepts that underpin the activities which are organised. Often an overarching theme is selected such as interdependence or community so as to allow for a broader area of study. Tony, consistent with the approach that was in practice at St Clares, selected an initial unit around the theme of plants. However, as he notes moving away from a bureaucratically determined approach to what content is taught at a particular time presented him with a feeling of uncertainty and doubt:

Phil: You do not know what to look at yet or what approach to adopt in planning work?

Tony: It worries me just to pick a theme out of the air, that really worries me.

Phil: Why does that worry you?

Tony: I am just not used to doing it. For so long we have been told what to do and when. To have to just decide, I will do this now, it is just a bit scary. I suppose you do not know if you are actually doing the right thing and there is no one to say, "Yes you should do this, or no you shouldn't do that." I am still sort of hung up on syllabus a bit, so I grabbed a unit out of the social studies. I find that is a good place to start, so that is what I used as a focus. Because I used a social studies resource book, my focus is just so defined. It is really good and then you have to look at what resources you have to go along with that (Interview 1-3-93).

Working in co-operation with the teacher librarian Tony managed to collect resources which would provide him with suitable activities for the students to complete, rather than depend on the activities that were prescribed in the syllabus outline. The problem of

ensuring that there were sufficient resources to back up the unit of work he was doing continued to be a concern for Tony well into his first year of multi-age teaching. However, he also began to question why he selected a particular unit of work and the activities associated with it, because he started to juggle questions about “product” and “process” when determining what the students were to know and how they were to learn it:

Tony: I even wonder when we are picking a topic why we are doing this. I know that I can understand some of the reasons why we are doing the activities with it, but why this topic? Like at the moment, today I had them walking around looking at the plants and I thought, really, why this. All of a sudden now the answer is not there anymore. I know a unit should not be content based but process based, but we need to look at content too and think what content do we think is necessary? (Interview 18-6-93).

The uncertainty that Tony experienced about his newfound practice was reflected in his classroom practice over the first six months as he began to experiment with alternative strategies to try and respond to the knowledge needs of the individual students and the way in which they may learn. However, as he notes, this was a gradual process and one, which continued to present him with the dilemma of meeting the demands of a prescriptive syllabus, and at the same time cater for the individual developmental levels of the students:

Tony: ..now all of sudden because there is no syllabus you are following, process has become important in multi-age.

Phil: Has this caused some turmoil for you?

Tony: Oh yes! Just the whole thing of, you know, each child is an individual. It has taken me these six months to get down to individual teaching. I started at the beginning of the year and basically I was still teaching a class and at the end of term one I got that down to groups, like I was managing to teach groups. Next term I will start to try and teach individual needs, but that has taken me six months. My biggest dilemma has been have I got the time while I walk around looking at individual processes. By the end of the year a number of these will be going into high school.

Jane: You have been learning about the students along the way, do you think they have been learning as well?

Tony: Oh yes they probably have. I can show you what they have learnt, but as I was saying, these processes and thing is only showing where I need to come in. I still haven't come to terms with that one yet (Group discussion. 18-6-93).

THE USE OF LEARNING CENTRES

Typical of the strategies that Tony began to implement to cater for his shift in approach to teaching and learning was the use of learning centres. Tony was to discover the benefits of such an approach early in his multi-age teaching, and it helped to maintain the momentum towards the change he was experiencing in his beliefs about the knowledge the students were learning and how they went about learning it. Significant in his following statement is the shift he was noticing away from a teacher dominated approach to one in which the students could take some responsibility for what they were learning:

Phil: You mentioned last time I spoke to you that you had difficulty in catering for all the different ability levels. Do you still see that as a problem?

Tony: Since the last time I spoke to you I have spent a good deal of time just making up cards, actually activity centres. I have been just sort of getting it together and now that I am starting to use those sort of things, where the kids are going off and working all on their own at what they can achieve, the place is running a hell of a lot smoother.

Phil: Did you find that there was a sort of letting go of being in control?

Tony: Yes you had control for so long, you know today is Wednesday morning, such and such a time and we all do this together, and I had to let go of that. I mean we all do Maths, but we do not all do the same concept, we have all different kids doing different things... what I am finding now is that I spend a lot less time to explain a concept, because there are only two or three kids involved, you can teach them in fifteen minutes. Normally in a traditional class I would take two half hour sessions to teach. So that is what I am finding because the time is so much more concentrated on those kids. Whereas you have to spend a long time teaching the whole class, making sure everybody has it, so in this system you are saving time there, which is giving you time to do something else with

somebody else. I have also seen how quickly the kids pick up concepts. Also you always seem to have those kids which seem to take months to pick up anything, but if you work with them for five minutes and concentrate on something that they are doing at that time, not something far removed, which happens often in the traditional system (Interview 10-7-93).

Tony also began to use learning centres with the units of work he was undertaking with the students, further indicating that he was relinquishing control. This was evident with the second theme he attempted on natural resources. He explained how he saw learning centres as facilitating the process of students taking responsibility for their own learning, an approach that was significantly different from that he had used in the traditional classroom setting. This refocusing of his beliefs and practice may also be an early indication of the interdependency there was between Tony's knowledge beliefs and beliefs about teaching and learning:

Tony: With the learning centres I will have a large one on soil, then the others, the water resources, the mineral resources and the forest resources.

Phil: Have you used learning centres before?

Tony: Not like this, not where the whole class is set up into learning centres. I had learning centres sort of for above average children and your strugglers, because that is the way we used to do things, just teach to the average and you had learning centres for the kids who finished quickly and got onto something else, or for the kids who could not handle that sort of work. I find using learning centres now helps cover all the information and gets the kids starting to take a bit of responsibility for what they learn (Interview. 26-4-93).

THE PROCESS, NOT THE PRODUCT

The shift that Tony was beginning to make away from an emphasis on content knowledge and outcomes to one which also looked at the processes and skills the students used became particularly evident with the way he approached student research activities. This was a new experience for Tony, as he explains:

Tony: I came across this book, Information Alive, when I was in the resource centre. It was sort of what I was looking for at the time.

Phil: What in particular attracted you to it?

Tony: Well I think it was mainly like getting the students to start taking ownership of their own learning. I think it is what I am coming to grips with at the moment.

The old question is what do you replace the syllabus with? I hope this is one solution (Conversation. 8-6-93).

On a visit to his classroom, Tony pointed out in the reference book on information skills what he considered were the important concepts that underpinned the research process and which would assist him in making a move away from his traditional syllabus bound approach to teaching. The beliefs he highlighted were a significant indicator of the shift that Tony had undertaken:

Resource based learning implies a view of teaching and learning which emphasises:

- *student independence and self-diagnosis of information*
- *students working collaboratively or individually*
- *teacher as facilitator, guide, questioner, process modeller*
- *students gradually being able to take responsibility for their own learning*
- *process of learning rather than content*
- *process of learning rather than the process of teaching (Observation 1-7-93).*

When Tony was questioned later in a formal interview about whether moving into research using the approach advocated in the book was a significant change for him, he offered the following response:

Tony: Yes, most definitely, looking more at the process than at the product. I decided that the process is the thing that I should be looking at. The process was more important than the product.

Phil: What do you think brought about the change?

Tony: Well to look at the product which is what I have been used to was too hard individually... it is much easier to look at the process the child used rather than

the outcomes. I mean if you look at the knowledge base for science, you could be assessing these kids until kingdom come to try and find out what they know and don't know. I found it was too hard with that many kids and abilities to treat them individually, to look at the product, so I had to look at processes. You tend to find out a lot more about the kids. It is just not a matter of they can do this, it is this is how they do such and such, they use these skills. It is just incredible how much more you know about them (Interview. 10-7-93).

The way in which Tony used information skills to assist him in both discovering the processes the students were using to reinvent their own knowledge, and in helping them become responsible for their own learning, was evident with the research project he organised in his third term of teaching in multi-age:

Tony: With the unit I am doing in the third term I hope it is not like it used to be, you know, collect all the projects and check them out, give them a mark and give them all back. I hope with the system I am using now that it will be monitored all the way through, checking on the processes used at each stage of the research. As they complete the deciding stage I can check and see what particular questions they have to investigate (Interview 10-7-93).

The approach that Tony had adopted to ensure he was shifting responsibility to the students for their knowledge acquisition was evident in the classroom. He continued to organise learning centres, group work activities, research activities and times for independent learning. A visit to the classroom at this time of the year illustrated the significant shift Tony had made in the way he approached teaching and learning:

The classroom atmosphere was relaxed but busy. Tony explained that the students had the option to work on three activities; book report, research and comprehension. The book report was on a book of their own choice. Tony had provided a format for writing their book reports. It was noticed that Tony had removed the "teacher's desk" from the front of the classroom because he didn't see a need for one anymore. He still had the chair placed at the front but "didn't use it all that much." Tony explained the process that the students were using for

their research. They had all nominated their own interest topics. The process being used was the one Tony had negotiated with the teacher librarian.

Tony moved around the classroom responding to individual questions. Tony explained that the groupings were not on ability levels as previously but were now organised "on self-selection with the exception of Carmen and Shaun" who were placed at the front because they needed to be supervised a lot more (Classroom observation 22-7-93).

ONGOING DILEMMAS

However, this move towards a more interactive and student-centred approach or orientation to teaching, learning and knowledge construction was not without its challenges and ongoing dilemmas, possibly indicating that Tony was not yet comfortable with the shift in approach. Several dilemmas within the first year caused him to question his own approach to the way he organised the learning environment. The first involved the issue of wasting time and keeping students on task. As he explains:

Tony: Another problem I have had is keeping the kids on task. Unless you are sort of watching them, they will just wander off. I mean that is just the nature of kids, they will go onto something more interesting that catches their eye; they will do that. The dilemma is, should you be letting them do that or should you be making them stay on task, and if you are wandering around keeping everybody on task then you are not spending any time with anyone (Interview 1-6-93).

The approach Tony had adopted within his classroom that gave rise to this dilemma provides some insights into how he was struggling with a move towards a new orientation. The image of "ripping out the structures" perhaps reflects best the vacuum he was finding since he had tried to move away from what he perceived as a content dominated syllabus in the primary school:

Tony: This year I have had a definite lack of something to pick up. Actually it has been good because I have got a lot of kids that come from different schools too,

and they are not used to it. A lot of them, as soon as I told them they could plan basically the next term's work they were going to do, they freaked out and that was good because I was just sitting there thinking I know exactly how you feel. Someone suddenly ripped out all the structures from underneath you and said off you go. I just felt, now what do I do? (Group discussion 18-6-93).

This dilemma of attempting to adopt an orientation that, on the one hand, gave more autonomy to the students but on the other appeared to create a somewhat uncontrolled learning environment also created the second dilemma about “wasting time” and “preparing students for high school.” As Tony explains:

Tony: I still have this concern over the students wasting time walking around doing their own thing. I still haven't come to grips with this yet.

Helen: Are you still worried about the time factor?

Tony: Yes well I am talking about a year seven tops here.

Jenny: What has year seven got to do with it?

Tony: Well I mean they will not be here next year, they will be in high school. What do you do? I know we have discussed this before, but sooner or later they are going to hit a system where time is important... What I am saying is can I allow these kids, in my own conscious thinking, allow these kids to waste three or four hours doing their own thing?

Jenny: What do you mean by waste?

Tony: Look all I am trying to do is prepare these kids for high school (Group discussion 6-8-93).

THE DILEMMA OF CONTROL

The problem of creating an orderly learning environment, rather than one which was open ended, is also a possible indication that Tony was trying to shift control of the process of inquiry and learning over to the students, but was confused as to how to do this. Tony saw this as a management issue and took steps accordingly to ensure that one, which involved the students, was developed. As he explains, it was necessary to clarify the sequence in which topics were to be approached and with whom they were to discuss the work. This

process was evident on visits to the classroom where the six steps to be used when undertaking a research project (deciding, finding, using, recording, presenting and evaluating) were prominently displayed. This in turn led to a more structured and systematic way of undertaking research projects:

Tony: Yes well this year, after six months, if you had asked me in June, I would have said I have had a gutful of teaching, the whole bit and I was ready to go. Whereas now I am probably a bit more comfortable, at least I think I am happy with what I have done this term. Up to two weeks ago I thought I was a disaster. With this research project a lot of them were mucking around and wasting time. Now that they have got their display of what they have done and I have gone through all the steps with them I think I am on target. See at one stage there too, I think I was too quick to let them go. Now I think I am sort of going to have to pull in the reins a bit and structure it a bit more with the next one they do, rather than give them open slather on what topic they want to do (Group discussion 6-8-93).

Tony, at certain times, also re-introduced the formal classroom setting where all the tables were arranged in rows and faced the front to ensure that the students remained on task and were not a distraction to each other when working:

It was noted that the tables had been rearranged within the class. Instead of being in groups of six they had been organised in three rows across the class and all facing the front. Tony explained the reason why. "It was really the little gang of four that caused this little change. They were constantly talking and not getting anything done. The only way I could see around it was to spread them out across the room and nail them to the seats. I think it is working, well at least they are not roaming around talking to each other (Observation 15-4-94).

However, despite these dilemmas Tony continued to pursue an approach to learning and teaching in which there was a high level of learner activity through interaction with others and both peer and adult scaffolding. This approach became evident with the unit on space that he undertook six months into the second year. It was significant for several reasons.

First, it was a unit that was not based on graded syllabus content, but rather on a current event that had gained some media attention. Second, Tony explicitly stated that he wanted the students to take ownership for what they learnt. Third, it was the first attempt Tony made to integrate across the disciplines. This approach to knowledge, teaching and learning recognises the possibility for linking key concepts, skills and values traditionally taught in a single-subject manner and had become accepted practice at St Clares. As Tony explains:

Tony: As you can see I am starting to gather material on space. I didn't want it to be the usual type space unit but one where like we could explore the mysteries of space, like black holes, pulsars, nebulae and beyond the galaxy.

Phil: Why did you choose this particular topic?

Tony: Well, with all the talk about the meteors crashing into Jupiter I thought it would be a good one to do, like space will be a real topic of interest. I will get them to decide which particular aspects of space they want to research and sort of keep the finger on them that way. I am also going to do 'The Hobbit' with them. Actually I really wanted to do it but I couldn't think of any way of integrating it into our theme on space. I thought I am really stretching it here but then I thought like if I make the unit title Space and Beyond then it would fit in easily (Interview. 7-6-94).

Subsequent visits to Tony's classroom during the implementation of this unit revealed not only learning centers, but also work contract work, agreed tasks, group work and research tasks. Tony expressed his satisfaction at being able to see the benefits of his approach:

Tony: The beauty of what I am doing now is that it throws the responsibility back onto the kids. Like with the literature bit that I put in to balance the research part, the kids have really thrown themselves into it because it is their creation. They have really amazed me, I have amazed myself.

Phil: How much direction have you given them?

Tony: Very little really. Like I have given them deadlines with their chapters and basic chapter headings but the rest is all their's. It is a bit of a breakthrough for me really.

Phil: In what way?

Tony: Well let's face it, I have always been used to standing up here and telling them what to learn, but now I am really seeing their creativity. Admittedly some of them are pretty hopeless, but a lot of them really surprised me (Conversation 8-8-94).

CHANGES IN APPROACH TO TEACHING

It also became obvious during this period that Tony had made a significant shift away from testing content at grade level for bureaucratic purposes, characteristic of a transmission orientation, to one which focused on assessment for diagnostic reasons so as to assist the learning of individual students. As he explains in the following response various approaches were used:

Phil: How do you assess?

Tony: Checklists, consultation and observation are probably the three main ways I assess. Attitudes, processes, skills and achievement are more clearly assessed by practical tasks and diagnostic tests. (Written response 8-8-94).

Teaching in a multi-age setting, Tony noted, caused this move:

Tony: It seems to me that everything I read seems to stress the necessity of specific objectives. I think that is a hassle for multi-age. In the traditional classroom you can apply it to the whole class. I think you just have to accept that if you are working in multi-age you are just going to have to work a lot harder.

Phil: What, with assessment?

Tony: Yes, just monitoring. I think you have to do more monitoring. I think the new student performance standard might be a way of doing that in every classroom. I hope some of the things I am looking at doing next year will help. Multi-age in theory is very difficult because of the very nature of the amount of monitoring and specific objectives, you know the objectives...

Phil: What for each individual?

Tony: Yes for each kid, you need to have specific objectives of what you want to attain for that child and what you want that child to attain (Interview 14-11-93).

The various forms of assessment that Tony began to introduce to monitor the students were evident on numerous visits to the classroom. Tony continually monitored the research work the students undertook by checking the various stages of the project and asking when necessary for students to explain and clarify what they were doing. He had also introduced a series of diagnostic tests in Maths in order to establish what concepts the children needed assistance with in the four basic operations and problem solving. He also used the Torch test to establish a profile on the students' reading ability. In the area of spelling the commercially produced Quota Spelling (an individualised program) was used. Tony also used selected non-graded testing material to assess the students' needs in the area of grammar. Response sheets were also sent home to parents requesting information about what they would like their child to achieve socially, emotionally and academically.

It would seem from the evidence that teaching in a multi-age context had precipitated several dilemmas for Tony, causing him to challenge his existing beliefs. The shift Tony had made away from his initial approach on entering the school is encapsulated in the belief statements he made towards the end of his second year in multi-age. It is these statements, coupled with his practice, that indicate his new perspective. The first statement reflects the change he made about the nature of knowledge and how this caused him to question what knowledge was important to teach:

Phil: What beliefs do you think you have changed permanently from say two years ago?

Tony: Or beliefs about what is important and what is not important. I definitely have become more process oriented. Content is really by the bye, I think that belief is probably, you have probably been there, like I remember picking up things and saying why are we teaching this, we are doing it because it is in the syllabus, where I think that has changed a lot. You are looking at the content, but

you are also looking more at the process and what is important knowledge (Interview 17-10-94).

Tony also indicated that his belief about teaching had taken a significant change in direction and was interrelated with his belief about learning. As he explains:

Phil: Has working in multi-age changed the way you approach teaching?

Tony: Teaching is no longer something you “do” but a process in which you are a catalyst. Letting children take some responsibility for their own learning and decision making process takes away the traditional teacher/student relationship and replaces it with more facilitator/learner types of situation (Written response 8-8-94).

Tony further clarified his belief about learning when he responded to the following question:

Phil: What are the key elements of effective learning?

Tony:

- *interest and self motivation*
- *worthwhileness as the children must see the need for learning*
- *the need to succeed must be fulfilled, although activities must be challenging, they must also be seen by the children as achievable*
- *ownership - learning is much more effective if the children feel that they control it and they can have some control over where they are going (Written response 15-7-94).*

Tony also encapsulated in the following response how he understood his own role in the teaching and learning process:

Phil: What do you think are the main images you would now use to describe teaching and learning?

Tony: Consistent but now overpowering. “I don’t know everything but I’ll help you find out.” Teacher as learner. To teach is to discover. Organise - facilitator. To

challenge, to discover. Friend and learning companion (Written response 6-8-94).

These images also are reflected in his definition of the curriculum:

Phil: How would you define the curriculum?

Tony: Anything a child internalises during his/her schooling years. To allow the educator to best discover how to fill the child's needs. Motivation comes from within. You try and find the right activities/learning styles to maintain the motivation and to continue building a partnership with the children (Written response 6-8-94).

It could be assumed then that the clash of cultures that Tony experienced when he encountered the multi-age philosophy caused him to make significant changes in his beliefs about knowledge, teaching and learning. However it also seems that some of his existing beliefs assisted his adoption of this new approach. These beliefs focused on the importance of the individual, the individual in relationships, the power base in the relationship, and the locus of control for change. It is the presence of these beliefs that facilitated the process of change once a compatible educational setting was found. Tony alludes to this possibility when he was asked what the most significant change agent was for him:

Tony: The most significant change agent is the inner drive to be the best teacher you can be. Multi-age gives teachers an opportunity to more fully satisfy that drive and good teachers to "make a difference" to each and every child. To help them reach their fully potential. To let them "be someone." Multi-age removes a lot of the outside barriers to this and this desire is raised to new heights (Written response 8-8-94).

BELIEFS ABOUT RELATIONSHIPS

Tony's beliefs about the individual student and his relationship with them seem to be consistent with an approach which values the importance of a moral and ethical component within the relationship and where there is an emphasis upon personal judgement and "the good" of the students. In this case "the good" is seen as providing a relationship where the primary concern is for the worth and dignity of each individual. It is guided by the belief that all learning is to be facilitated by a relationship of mutual trust, rightful dignity and reciprocal interest. Within this perspective the teacher also is a leader with recognised knowledge and concern for the students' growth, who progressively yields control as students are able to exercise self-control.

Tony had already signaled his belief about the importance of the individual when discussing his beliefs about teaching and learning, but this position was amplified when he began to discuss not only his own sense of self as a teacher but also his belief about the importance of relationships within the classroom. As he notes in the following comments, changes in relationships would have been a natural progression in which multi-age played some part:

Tony: Multi-age has brought about some change in classroom relationships but I think that in a way that is only through me becoming more comfortable as a teacher and it would have been a natural progression anyway. Obviously multi-age has helped speed up the process and I think the speed of the progression is a definite plus for multi-age (Written response 8-8-94).

Tony found that the culture engendered within a multi-age classroom was consistent with the relational environment he espoused. As he explains:

Phil: What are the affective benefits of multi-age?

Tony: Socially the children are more confident in the company of other ages. As teachers we try to foster a more natural working environment and therefore it is

absolutely necessary to lose our power base. Any family that has an overpowering figure is dysfunctional and I would equate this to a family group classroom (Written response 8-8-94).

A significant belief element that Tony held was that the self-esteem of the individual is central to his approach when interacting in the classroom and had been well established before working within a multi-age setting:

Phil: Which beliefs have you retained since working in multi-age?

Tony: Individuality, I think that has always been a big part. I have always looked at nurturing children's self esteem as probably the most important thing we do. Therefore you don't give a child a task too hard and nor too easy. It has to be ultimately and achievable challenge. Like I ended up with all sorts of different groupings. Ultimately it came back to giving the individuals achievable goals whether that be by putting five of them in a group or by allowing the older kids or better kids to role model or whether it be from individual instruction or whether it be whole group instruction. I mean what you ultimately aim for, it doesn't matter what sort of organisation you have got, you are still looking at giving each individual a challenge that is ultimately achievable and something where they won't label themselves (Interview 17-10-94).

When further questioned as to how he went about developing the students' self esteem within the classroom, Tony responded with the following:

Developing self-esteem is not a program or process, it is an attitude. If you treat each child as important and significant and more importantly believe this to be true. Then self-esteem happens. As teachers I believe we do not always allow children to be children and this is often the cause of low self esteem (Written response 2-11-94).

CHANGE BELIEFS

The process of change, then, appears to have been facilitated by Tony's beliefs about the importance of self and self in relationships with the students; an approach that was compatible with the multi-age philosophy favoured by the school. Tony's beliefs about change, which focused the process and content of reflection within an ongoing desire to improve both personally and professionally, are contained in his following comments:

Tony: The most significant change agent is the inner drive to be the best teacher you can. Multi-age gives teachers an opportunity to more fully satisfy that drive and good teachers to 'make a difference' to each and every child. To help them reach their full potential. To let them 'be someone.' Multi-age removes a lot of the outside barriers to this and this desire is raised to new heights (Written response 8-8-94).

A further comment of Tony's links the importance of relationships with the need to reflect on the quality of these relationships:

Phil: What knowledge do you think is important for your own self?

Tony: I think knowledge "about self" is important. I need to know my self, what is within. What I can cope with, my limitations, my stress levels, my self esteem. What I can and can't do. Therefore relationships with students is more supportive, understanding, worthwhile. Time to reflect about self is important. Time to reflect about me and the students (Written response 8-8-94).

This approach to change and the role of reflection appears to be characteristic of a perspective that emphasises the need for teachers to identify and reflect on what is problematic about teaching and learning. Within this approach there is the need to look beneath the surface of the product to the student for whose interest and well being the practice exists. This is an important shift away from an approach which focuses on the technical aspects of teaching and is relatively static and unresponsive to changing priorities and circumstances. Tony referred to the importance of looking beyond the technical

aspects of reflective practice in the following interview discussion when the topic of videoing a lesson was raised:

Tony: I do not know with this video thing, I think that is a little too technical and you loose the overall picture with technicalities. You worry about things like in this lesson I asked four group questions and got a group answer... I think the reflection you need is to actually take time out and ask what am I doing and what am I trying to achieve here, because let's face it, you don't get it at home. I think we need to look at what we are trying to achieve and I think you can do that a number of ways. I would like to see with induction a lot more sharing of ideas. I know there are a lot of people threatened by this but I cannot see why, because we are all in the same boat...I would like to see a lot more of what goes on in classrooms. Like I know pretty well what goes on in Jenny's and Carmel's room because they let me come in for a couple of afternoons and sit in on what they did. I would like other people to come into me...this is not a challenge, it is just about how you go about doing this and this and you are sitting there and explaining and you have clarified probably for the first time in a long time to yourself why you actually do it...you know I am doing this because I think this does such and such, and suddenly you are by transmitting to someone else you are actually reflecting yourself on what you are doing (Interview 10-7-93).

CONCLUSION

Tony's endeavours to clarify his own assumptions through reflection provided him with the motivation to continue to improve his own practice within the multi-age setting. This reflexive belief appeared to be an established element of his belief system before he entered St Clares but was possibly constrained by the traditional educational culture he worked in. When provided with the opportunity to change, a notable shift began to occur as his beliefs about the worth of the individual and the importance of relationships assisted his transition into constructivist teaching. This shift resulted in a coherent and interdependent belief orientation, which enabled Tony to begin to make sense of the school's multi-age

philosophy. Towards the end of his second year in multi-age Tony articulated the key elements of his belief system:

- *individualised instruction and more importantly evaluation*
- *co-operative planning with the students*
- *the ability to allow each child to succeed and not be branded a failure due to averages*
- *a more relaxed discipline*
- *taking responsibility for learning and behaviour away from the teacher and placing it with the student*
- *watching the students being able to find their own knowledge and use it through more research and independent work (Written response 8-11-94).*

KAREN

INTRODUCTION

Karen transferred to St Clares at the beginning of 1993 after spending her first year of teaching in a composite grade six and seven class in another school. The move became necessary as that school was downsizing due to declining student numbers. When it was explained to Karen by the administration that there were two positions available within a double teaching unit comprising fifty six students ranging in age from five to eight, she expressed some hesitation. This reluctance was in part due to the age of the children and also to the notion of team teaching in a double unit. The concept of team teaching has been an established practice in Queensland primary schools for twenty years and normally involves both teachers working co-operatively on all aspects of the curriculum. A double unit was introduced at St Clares in 1989 when two teachers opted to open the partition between their respective classes and teach as a team. Due to staff changes two positions became available within the double unit at the beginning of 1993. Karen's decision to take on the challenges of a double unit was made easier when the second position was filled by a friend with whom she considered she could work effectively in a team teaching situation.

The transition from teaching a composite class of older children to a multi-age grouping with younger children proved to be a difficult one for Karen and resulted in several emerging dilemmas that were to challenge her existing belief system, as evident in the following table. The tensions arose as Karen struggled to reconcile the challenge of responding to individual needs without applying explicit categories of difference which compared students, such as grade levels; maintaining authority over the content to be taught but at the same time attempting to create a learning environment in which the students took an active rather than passive role in the learning process; negotiating issues

surrounding accountability and parental expectations; coming to terms with the number of students in the double unit and organising appropriate resources; and also dealing with emotional upheavals in her own life which eventually led to her leaving the school and the education district at the end of 1994.

As Karen struggled with the dilemmas she encountered during her time at the school, a gradual change began to appear in her practice as she attempted to reconcile the beliefs underpinning a multi-age philosophy with her beliefs about school knowledge, and the role of the students and teacher in the learning process. As the following table demonstrates, there were some significant changes in Karen's approach to teaching and learning as she questioned the what of knowledge and the how of knowing. These shifts in Karen's beliefs and practices will be highlighted in the following story, beginning with the early dilemmas she experienced in the first two months at the school and then investigating how she attempted to address these challenges.

BELIEFS	EARLY 1993	LATE 1994
Self	vulnerable neophyte teacher, concerned for welfare of the students, insecure, anxious, confused	insecure, anxious, confused, concerned for welfare of students
Relationships	need to control learning environment, complex and interactive, nurturing, caring, emotional support	power sharing, family model, emotional support, caring and nurturing
society and social justice	cooperative, caring, peaceful	cooperative, caring, peaceful
Knowledge	adherence to graded syllabus, teacher controlled, prior knowledge important, content knowledge important, conceptual knowledge	teacher controlled at times Integrated, know how not what, processes, skills, content
Change	external prompting, image: change to survive	external prompting, seeking inspiration, unclear about what needs to change
Teaching	direct, lock-step, structured, control over the content and process of learning, openness and caring	facilitator, lock-step, scaffolding and supporting learners' activities, control over learning, image: blending in with the kids
learning and learners	learning is personal understanding, cooperative, wide range of resources to support learning, teacher controlled	learning is personal understanding, learning is active, individualised, self-regulated, social, catering for the needs of the individual
Assessment	cohort-referenced	cohort-referenced and student-referenced
Curriculum	skills, content	skills, content, processes, integrated

EARLY DILEMMAS

Karen acknowledged early in her first year of teaching in multi-age that she felt ill equipped to create a learning environment which was consistent with the philosophy favoured by the school. This was due in part to a perceived failure by those responsible for her pre-service to provide an adequate alternative to the learning she was familiar with:

Phil: Do you think your pre-service assisted you in making a transition into a multi-age school?

Karen: No I really think we missed the boat there. I think not being in a school and not experiencing multi-age. I am thinking much more about now that I am here. At Uni I would not even have considered the fact that learning is something different to what I always thought it was or the way teachers facilitated it. I did not even care at Uni. It was mainly, "How am I going to pass this crap? How am I going to integrate this book into social studies?" Stuff like that has got nothing to do with teaching and learning in multi-age. We were totally unprepared for all this and multi-age and I sure I could just be doing things better but it is just going to take time before I work it out.

Phil: Are you happy with multi-age and what it aims to do?

Karen. Yes, when I work out exactly which way I can make it work best it will be nice {Interview 24-2-93}.

Karen was attracted to a multi-age approach to teaching and learning, but she was not sure how to put the theory into practice due to several competing demands within the classroom. It seems that at this early stage of her multi-age experience Karen demanded a high standard of competence from herself and she became frustrated when this was not possible:

Phil: What are some of the dilemmas and challenges you have experienced so far?

Karen: It is great in theory but in practice it is not O.K. It sounds great in theory but I would like to see somebody do it or explain how to do it in practical terms. I do not know I am really confused.... It is not what I want ideally and I am never happy until it is exactly what I want in my mind, but the way of getting there is the problem. In my mind I would like to have things that are interesting and kids are

working at their own pace and so on. But it is just the amount of kids. It is overwhelming (Interview 3-6-93).

THE DIFFICULTY WITH FIRST YEAR STUDENTS

In another response shortly after the above Karen further explained the causes of her frustration and in particular the difficulty of reconciling the theory of multi-age with its practical application:

Phil: Do you find any conflict between your theory of teaching and learning and the practice?

Karen. Yes I do. It is very difficult at the moment to put the theory into practice due to time, resources and lack of co-operation of the children (Conversation 6-6-93).

The demands created by perceived time constraints, the number of children, lack of suitable resources and the task of organising a developmentally appropriate learning environment were some of the competing imperatives Karen encountered early in her time at St Clares. However these dilemmas are not peculiar to a multi-age setting and are often experienced by teachers in graded classrooms. What seemed to compound the issues for Karen was the nature of her multi-age classroom. Karen indicated that for her the process of integrating the first year students into a multi-age structure created a challenge:

Phil: I would like to hear your reactions to the first three weeks of your multi-age experience.

Karen: Well it was really different with this class because they are first year, second year and third year and I just had older kids last year. So I found coming into a multi-age class this year much harder. To incorporate the multi-age philosophy I found we had the first years out a lot to work with them. They needed pulling into routine and before we could get them to learn anything we had to get them into a routine, so that is still in the process of happening.

Phil: So it is mainly the first years that are causing you a difficulty at this stage?

Karen: Yes, it is was because the second years and third years did it last year, so they kind of know the buddy system and they know how to a degree to co-operate, whereas the first years can not co-operate and they have a lot of trouble working in groups and I think that has a lot to do with multi-age, working in groups... the first years learn so much in that first year and what they learn is so important. I would hate for any of it to get missed because the other kids are there and that's what I am really on about at the moment and I feel that the first years are being taken out a lot, but I don't feel we are overdoing it because they need to learn so much before they can work in with other children. At the moment they are basically at the same level. We can't really say this child is advanced or this child is advanced even if they can work with the second year kids. Although we can say some of the second years are not going to come down to the first years. My problem is I need to know how I can take care of the kids and make sure they cover what is needed from the first year syllabus (Interview 24-2-93).

At this early stage of her first year in multi-age Karen had structured the groupings on a model compatible with composite groupings where the different grade levels are treated as discrete units. Her reasons for this emerged from the need to develop a routine with the first year students so they could work in a co-operative environment that optimised the learning possibilities. However it also seems apparent that Karen was locked into a grade level mentality which prevented her from blurring the distinction between the year levels, the cause of which she attributed to her traditional background in education.

CATEGORISING STUDENTS

The notion of having different year levels was also used as a basis for labelling students or assigning comparative categories such as “advanced”, “struggling”, “lower ones”. However the task of grouping the students using such categories also proved to be a logistical challenge for Karen and her teaching partner. In order to assist Karen and her teaching partner to make meaning out of the various levels in their class, they were assigned a day whereby they could organise the class in a way which was consistent with the non-graded

approach favoured by the school. Karen's reflections on this day provide an insight into how they intended to organise their double teaching unit using explicit categories of student differences based on perceived grade level categories:

Karen: It is the organisation; teaching is no problem, but the way we organise everything. So we basically said, "O.K. what kind of levels have we got and we will put the kids into those levels?" We decided that the first years were basically at the same stage; there was not anybody there we could move. Second years were in a bit of trouble and we had to move around and maybe some third years. So now we have got four groups, like main groups.

Phil: So what criteria did you use to form those four groups?

Karen: Language, just what we have seen in writing. We kind of said just forget about the first years at the moment. The second years were kind of mixed up, so we had the lower working ones and those we thought were maybe a second year standard, which really does not exist, but just going up gradually. So they do not have to stick in *it*, these groups are not fixed, they are like progressive levels. They can sort of go through and the kids that are in the top level you just give them extension work.

Phil: So the way you have got them organised would be based on ability levels?

Karen: Yes there are two different levels. Like we will take level A and level B, which for me is the first years and the other kids that are struggling (*Interview 24-2-93*).

The concern with organising the groups into four ability levels was reflected in the way the reading program was set up, based on a commercially produced reading scheme:

*Karen: Well with our reading program, what we are doing is one week we will focus on one particular book and the next two weeks we will have another. So we have eight envelopes with different names on with activities inside them. So I am putting a second year or a slow third year with two first years and they are going to work together (*Interview 13-3-93*).*

THE PARENT INFORMATION SESSION

A parent information evening was organised by both Karen and her teaching partner to explain to parents how the classroom had been structured. It became obvious once again that groupings had been determined on the basis of a perceived grade level ability, thus allowing for comparative student descriptors such as “behind” without explicitly explaining how such categories were reached. Also, at this session Karen provided an early indication of her beliefs about the role of the individual in the learning process, a belief that will prove to be significant in her attempts to develop a classroom that was flexible and varied:

During the session emphasis was placed on the fact that children would be working at their own level and allowed to operate at their own ability level. It was stressed that the onus was on the children to become independent. When the grouping structures were explained, it was on the basis of grade one and two and two and three. It was explained that those in the one and two groups were a little bit behind. The parents were also informed that harder homework would be given to those in the older groups (Observation 10-3-93).

The organisation of the two teaching groups in the double unit, based on these ability levels, was maintained throughout the year. Karen operated from one end of the double classroom with the year one students and those year two students whom they determined were a “little bit behind.” This grade level approach to placing students in the two groups was in evidence when a new student arrived. Micah was in her first year of schooling and after a day in the classroom Karen suggested that she should be moved into the advanced group with her teaching partner:

Karen: The work she has brought from the other school is of a very high standard. Her sentence structures are of a very high standard and well developed. This work is so good that she will have to go into Marg's group (Observation 23-8-93).

The same criteria for classifying individuals were also used when a student from Karen's class was transferring to another school, using a conventional syllabus, and it was necessary to provide a written report. Chloe was in her second year of formal schooling, but Karen had reservations about what she could do:

Karen: I have difficulty in explaining to the new teacher where she is at. She is really only second term of year one work and she is doing O.K. for a year oner. I don't think she would be able to cope with year two work (Conversation 26-5-93).

CONTRADICTIONS IN CATEGORISING STUDENTS

The comparative and apparently subjective process Karen used to group and label the students appears to be inconsistent with her belief below that students should not be compared with each other. It also seems that Karen's equivocal position on the non-competitive and non-comparative philosophy being espoused by the school continued to trouble her, especially when she had to deal with an inquiring and critical parent body. The following conversation took place during a staff discussion on assessment practices:

Karen: I am finding the parents are constantly nagging me. Sometimes it is during school and I feel I have to be accountable to them. They expect certain things about covering the grade syllabus and they compare, which is one thing I never do. They constantly compare their own children and I hate that and I do not encourage that type of thing.

Jenny: Have you told them this?

Karen: Yes, when they approach me about it, but I still know a lot of them do it... Oh well I don't know if this is relevant now but I was just going to say that when I was talking about comparing kids, that instead of the parents being able to attack me personally, I wanted them to say it is because of the school and it is the school philosophy that we do not compare children. If they do not like this non-competitiveness then they would say this is the wrong school... I am pretty gutless that way. I do not want them attacking me because I am so inexperienced. You know they can really say that.

Phil: Inexperienced in what way?

Karen: Because I am only two years out of Uni and it is a big thing they can put on me. I reckon even if it was unfounded they are still thinking that.

Jenny: But what is important to you? What do you want to do?

Karen: I want to care for the kids without the parents attacking me for it. I feel I need to make sure that I cover what is in the syllabus so they can't approach me and start comparing kids because I haven't taught them what they should know (Staff discussion 10-9-93).

What also seems to be implicit in Karen's comments is how her sense of self was being threatened by her own perceived vulnerability as a neophyte teacher. This in turn caused her to draw on referential support from the school for its belief about a non-comparative and competitive philosophy.

Karen's early experience in multi-age appears to have presented her with several dilemmas as she attempted to reconcile the theory of multi-age with her beliefs and practice. Her initial dilemmas focused on issues related to organising students in the three year levels into ability groupings based on cohort referenced graded testing and then to ensure this was credible in the eyes of the parents. However these challenges may also have been symptomatic of a more profound clash of beliefs Karen was experiencing as she also tried to reconcile her beliefs about what constituted important knowledge and her role in the process of teaching and learning teaching, with those underpinning multi-age.

BELIEFS ABOUT KNOWLEDGE, TEACHING AND LEARNING

As became evident over the two years of this study, Karen made a substantial shift in her beliefs about the how of knowing but continued to experience difficulties with the 'what' of knowledge. These knowledge beliefs played a significant role in determining the changes that Karen made in her beliefs about teaching and learning. Karen saw herself as custodian of the approved syllabus as well as being nurturing and having to assist all the students to meet the syllabus standards. What she came to realise and be comfortable

with was that she could enact those beliefs while allowing her students to take some responsibility for when and how they worked on the received 'what.'

Karen had given an earlier indication that she wished to develop a co-operative classroom climate in which the students could become independent and autonomous learners. These beliefs about how she intended to relate to the students and organise the learning environment seem to be consistent with her espoused beliefs:

Phil: What do you think are the important elements of effective teaching?

Karen:

- *openness between children and students, a caring relationship*
- *flexibility to deal with subjects the children are interested in*
- *resources-knowledge on teacher's behalf*
- *organisation of activities which challenge the children*
- *classroom organised for optimal use of co-operative learning (Written response 10-6-93).*

Phil: what do you think are the important elements in learning?

Karen:

- *interest*
- *autonomy*
- *relaxed friendly environment*
- *resources*
- *purpose*
- *wide range of resources*
- *preparation time for teachers*
- *smaller class sizes (Written response 3-6-93).*

The above comments suggest that Karen intends to engage learners in activities which challenge them to construct new understandings in a positive motivational environment where there is open communication between all the participants. They also suggest that Karen is attempting to adapt the content to suit individual needs and to investigate ways of increasing students' sense of responsibility for learning along with their ability to work co-

operatively on joint tasks. Within this teaching/ learning environment then it seems that Karen intended the students to be active and curious learners rather than passive ones.

THE DILEMMA OF RECONCILING BELIEFS WITH PRACTICE

However putting these beliefs into practice proved to be problematic:

Phil: What do you think are some of the inhibitors that might prevent you from creating autonomous and independent learners?

Karen: The children mainly. The second years are O.K. but the first years are not. I do not know if there is some kind of thing I should have been doing to try and train them into doing their own work. We talk about it enough. We say that they are their own boss, that the amount of work they do is up to them not up to us. Still I am not so worried about the kids that cannot keep up, as the kids who could do more, you know what I mean? Well where is this pot of magic? It is letting them go at their own pace which is good, but some kids do absolutely nothing and with the parents in the room that really worries me. It is fine for things like colouring in. For things where I think they have to learn something and they have to cover all the topics in the syllabus.

Phil: Such as?

Karen: Maths possibly but more so with sounds. For sounds I think it is really important to learn to read and the quicker they learn to read the more easier it will be to let them go and they can read activities (Interview 3-6-93).

The key dilemma alluded to in the above quotation is the issue of “letting go” and allowing the students to work at their own rate in a developmentally appropriate way. However as Karen notes in her following comments this sharing of power within the classroom is a belief she found difficult to implement, due to several interrelated factors:

Phil: What provides the biggest barrier to letting go?

Karen: My own socialisation into the teaching profession through teacher training. Parental perceptions of how the classroom works, particularly when

they are present in the classroom. My faith in the autonomy and power that the children themselves are in control of (Written response 6-7-94).

THE ISSUE OF CONTROL

It seems that Karen has issues revolving around the nature of control within the classroom. She wanted to ensure that the quality and quantity of the work the students were producing was appropriate for their grade and that it took place in an ordered environment. From her following comments it also seems she wished to have control over the process of learning and over with whom the students discussed their understanding. However, it also apparent that she was attempting to move towards a learning environment where the students can make their own choices and learning options. An indication of the tension and the inconsistency is found in her following comments after a process writing lesson in which the topic was not nominated by Karen:

Karen: This is the first time I have organised a process writing lesson in which I have not directed the first years with a topic. Up until now I have always nominated what and how they would be writing about. I always give them the lead in. I am concerned. Do you think it is alright to let them go? You know me, I really find it hard to let go. I like to be in total control (Conversation 26-5-93).

Clearly, Karen felt uncomfortable about students actually taking control of the content of their learning. This dilemma remained with Karen for the two years she was at St Clares:

Karen: Some days I still want to know what everyone is doing and I want everybody to be doing the same too. I expect there to be outcomes, physical outcomes. I know some teachers don't think that way, but for me and to be accountable to parents, like why they are at school, I think they have got to have done something (Interview 11-11-94).

THE PROCESS OF CHANGE

It can be assumed thus far that Karen was in transition as she attempted to reconcile two approaches to teaching, learning, social relations and knowledge construction. On the one hand Karen seems to believe that power within the classroom resides within herself to determine the objectives and outcomes of the learning process and the students have virtually no power to determine personal learning objectives. On the other she is attempting to create an interactive learning environment in which the students have a choice about with whom they wish to discuss their understanding and the learning options available. As Karen reflected at the end of her two years in multi-age, a shift in her own beliefs and practice away from a unilateral power base to a more relational one had been one of the main insights she had gained from her experience in multi-age. Eventually she was prepared to let the students take some control over the content covered and the process they followed in doing so:

Phil: What do you think has been one of the most important insights you have gained from working in multi-age?

Karen: I think the relationship between the teachers and the students are very different from a traditional classroom.

Phil In what ways?

Karen: Well in so far as sharing the power base, giving them control over what they are doing for the day. Not controlling every movement that they make and giving them choices (Interview 5-5-94).

Karen further clarified how she understood this shift in the locus of control taking place in the classroom:

Phil: How do you see the power base changing in the classroom?

Karen: It is kind of like contract learning. That is what I am talking about the practical side. We were saying when we were thinking about this that we were seeing children taking power of their learning into their own hands and completing the work and it is their responsibility. So it changes how you set work

and how you expect them to finish it. It also shifts the responsibility, which is sometimes difficult (Interview 5-5-94).

THE LEARNING ENVIRONMENT

It seems that Karen is attempting to create a learning environment in which the students have some control over when and in what sequence the various activities are approached and the quantity of work completed. As Karen acknowledges in her following comments, this shift in emphasis from one in which she assumed personal responsibility for student success or failure to one which other factors such as student motivation are significant, is an important change for her:

Phil: What changes, adaptations or modifications have you seen this year?

Karen: To my approach? Mainly just one thing is the way I approach learning. It is the independence, children taking responsibility for their own work. I feel the difference between this year and last year was that I always felt responsible for how much they were learning and even if they didn't learn I felt like it was my fault. This year I put more responsibility on them, even though they are younger this year. I still think O.K. if you are not going to learn it is your responsibility . When parents come to me and say this or that, I just say to them well they have to start taking responsibility for how much they do. So that is one big thing.

Phil: How did the parents respond to that?

Karen: Pretty well once we talked about it. I normally explain it by saying that if you plan to keep him in this school, it is going to be all the way through. I think they are aware that once their child grows up and is in the real world, no one is going to be forcing them either and that is always something they can relate back to. I also explain to them that if they are motivated by themselves it is more real for them, they want to do it rather than thinking that they have to do it. I notice a lot of them are taking time to do things now instead of doing it in a certain time. It is really good; it takes all the pressure of you (Interview 17-11-93).

CHANGES IN PRACTICE

When Karen was asked to clarify what particular elements of her practice she had changed to ensure they were consistent with her espoused beliefs about catering for the needs of individual students and allowing them to become independent and responsible learners she identified several strategies, including learning centres and work contracts:

Karen: Try to work with the children one to one. Ensure that I communicate efficiently enough for children to understand what I expect of them individually. Create individual work programs where possible. Use weekly maths targets and learning centres. Allocate times for children to decide what work they feel they need to catch up on (Written response 1-7-94).

Karen described situations where she had implemented such strategies to promote student choice and responsibility, to offer opportunities for self-instruction and to explore new topics in a peer tutoring situation:

Karen: Like we had to change our approach to Maths as I had a line a mile long waiting for me to correct their work. Now we send them off into different groups. Like we have four different groups of Maths activities that they can do. Like the first years have activities in folders on operations they can do and so do my second years. They go and do these if they have finished their contract pages until I am ready to see them. We have also set up a shop which both Kellie and my groups use. They can buy things and the third years are the shopkeepers and they help them with their addition (Interview 15-6-94).

At a later date Karen expressed the need to develop the idea of learning centres further so as to provide opportunities for the students to work on various activities and to become independent and responsible for choosing and completing work:

Karen: The last lot of learning centres worked O.K. However I found they were running out of activities. I have started a new lot now that you can see around

the room. I have a learning centre for measuring. It has ten different activities like, what is your mass, a height graph, handspans and balancing and mass. That is one of the activities. The others are their Rigby maths book, games and puzzles. The older children in Kellie's group are really helpful and so is the teacher aide. It is the only way we can work it and them trying to be independent (Conversation 27-7-94).

A contract system of completing assigned language tasks was another way in which Karen attempted to allow students to work on their own and to decentralise teacher control. This language contract was drawn up by Karen and the teaching partner after conferring with Jenny, who had used this notion of contracts for several years. The contract was given out at the beginning of the week and was collected on a Friday so that it could be reviewed on the weekend. Particular times were allocated during the day when the self selecting activities on the contract sheet could be completed. These completed tasks were then presented to Karen who would check the listed activity and write relevant comments:

The activities included the following

- *handwriting*
- *sound book*
- *diary entry*
- *book review*
- *story writing*
- *conference*
- *read to partner*
- *silent reading*
- *read to an adult*
- *give prepared topic*
- *borrow a library book (Observation 10-8-94).*

This contract was used to help individualise the learning. Karen would work through the language contract with students and attend to any areas that presented a difficulty or needed attention. The contract system also allowed the students to self-select from any of

the activities organised and also provided an opportunity for Karen to work with individual students. As Karen also noted late in her first year, she was beginning to see the advantages of allowing students to take some control of their own learning:

The morning session started with the whole group meeting at one end of the classroom. Both teachers sat on chairs in front of the group who were sitting on the floor. After the roll was called the morning talk session was started. Six students who had been rostered for that day spoke on various topics. At the end of each presentation Karen made a comment on the space allocated on the contract sheet. At the conclusion of the morning talks, Karen said, "The first and second years move down to my end of the room and sit in the conference area." The group consisted of fourteen first years and eight second years. The remainder of the group which consisted of one first year, eleven second years and eighteen third years moved down to the other end of the room with Karen's teaching partner.

Karen explained to her group that this was going to be a writing session and they could write about anything they wanted. They were also reminded that they could use words around the room or from the board in their story. The students then moved off to their seats around the tables in the room. These groupings were divided into the two grade levels. During the session Karen moved around the tables and conferenced with individual students and signed the contract sheets when she had done so. At one stage I asked Karen how Alex was going. Alex presented as a student with learning difficulties and was reluctant to engage in any writing tasks. Karen replied: "Ever since he has discovered animal books he has really taken off. You can't get him to do anything else." Rita then proceeded to explain how she had prepared question cards which he had to answer and then bring to her so they could discuss the answers he had drawn or written. Karen also acknowledged that he would not be able to do this for ever, however for the time being it seemed to tap into his interests and was a valuable learning experience (Observation 2-10-93).

IMAGES OF CHANGE

Even though Karen saw the need to retain control over what was learnt, it was obvious from her classroom practice that she had begun to question the dominance of single focus activities which required direct instruction by herself. She had also designed a learning environment where there was the possibility for the students to extend their learning in areas intended, but in ways that were consistent with their own ways of learning. As she notes:

Phil: Do you find that multi-age has changed your beliefs about your role as a teacher?

Karen: Yes that is true. Teaching, I mean I was doing a lot of it at the beginning of the year. I would have spent most of my time at the blackboard. I do not think I have used the blackboard in three weeks. It is completely new to me, you kind of blend in with the kids. I guess sometimes that you do not get the kind of respect that teachers used to get. They do not really care what they say to you, in a good way I mean. I think that is really good (Interview 7-10-93).

The image of “blending in with the kids” was also consistent with another image, that of a “facilitator”, which Karen used to describe her role as the teacher in the classroom, confirming she was attempting to relinquish total control within the learning environment:

Karen: When I had to think about my role as a teacher, it had strong links with what I do in practice because a lot of the stuff is not really teacher based. You do not stand up there and teach so much. If you see the role not as a teacher but more as a facilitator, which I do, then you do not presume to know more and you get the children to teach each other things (Interview 13-6-94).

Karen reflected on the benefits she saw taking place in the classroom as a result of her changing perceptions of herself as a teacher:

Karen: I really had a positive experience of multi-age today. A third year was teaching a first year. It was a really funny feeling. During the whole thing I wasn't even in it. I am not really used to not having all the control (Conversation 4-5-94).

Karen's concern with creating a classroom environment that provided clear, predictable instructional patterns, especially those that could enhance student responsibility toward their own learning, is encapsulated in her following comments at the end of her second year in the multi-age classroom:

Karen: I suppose some of the things I still find hard to let go of are that I don't believe that children can just pick up things without me teaching it to them.

Phil: That they don't learn by osmosis?

Karen: And I think that the role of the teacher is very important because we have to organise and facilitate the learning experiences, so the kids can get something out of it. What we teach is not necessarily what is learnt, I agree with that, but we still have an obligation to provide experiences that kids might learn from. I have to start scaffolding, helping them to succeed. What has changed in, like in my philosophy, I suppose is that I think I am letting them take on more responsibility for what they learn (Interview 11-11-94).

The two images used by Karen reflect the direction her practice had started to take as she attempted to reconcile her beliefs about teaching and learning with her practice in the multi-age classroom. By the end of 1994 Karen's acknowledged that learning tasks can be negotiated and learners are able to reinvent knowledge largely unassisted by the teacher. From this perspective value is given to learning that is progressively more self-regulated and self-controlled, and motivated by personal goals and interests rather than teacher authority and other external factors. There is also a recognition by Karen in her belief statements and practice that learning is seen as being both social and personal in that others are significant in helping to develop knowledge which can be unique and important to the individual. As Karen approached the task of planning units of work she attempted to involve the students so that they could begin to see themselves as active contributors to an

ongoing process of inquiry. Her emphasis on knowledge which begins with questions and curiosity rather than a set of prepackaged facts contained in a graded syllabus document reflects a belief orientation which values personally constructed knowledge, within an inquiring community. Karen's practice of exposing the students to a substantial list of concepts, skills and attitudes was evident in the content themes she undertook. As she explains these themes could best be undertaken when integrated across the curriculum areas:

Phil: Have you got a particular image of the curriculum?

Karen: The curriculum to me has to be integrated. Is this what you mean? It has always been that way for me, integration and all that learning as a whole was a big part when I was at Uni. I think that is still high on my beliefs and I like to learn new information to try to make the curriculum more integrated across all the subjects (Interview 5-5-94).

Karen's belief about knowledge as consisting of more than a body of facts transmitted by the teacher is also encapsulated in her understanding of the curriculum:

Phil: How would you understand the curriculum?

Karen: The curriculum is areas of content, processes, skills and attitudes aimed at covering a vast scope of learning (Written response 14-5-94).

However, Karen continued to express some equivocation about what constituted valuable and worthwhile knowledge as her following response, which appears to be self-contradictory, indicates:

Phil: What do you think constitutes important knowledge?

Karen: The need for basic concepts, especially sounds and maths concepts. Know how not what. Knowledge about culture – the way society works. Things they want to or need to know relevant to their lives. Not so much knowledge as skills (Written response 14-5-94).

Her following observations also indicate that she moved between a teacher-nominated content domain and student involvement in unit planning. In selecting topics for the themes to be studied in the classroom, Karen noted that there was the need to have the flexibility to deal with subject knowledge the children were interested in. Karen explained how this process of negotiation was approached with one particular unit of work as she attempted to activate relevant background knowledge with the students:

Karen: Well we have only really used the idea of getting the students to tell us what they want to learn about twice so far. Like for the unit we did on the dinosaurs, it was the kids who let us know what they wanted to do. Actually we were hoping they would, because it was around the time of the Jurassic Park movie and we knew there would be heaps of resources available.

Phil: How did you go about selecting it?

Karen: Well we got both groups together and asked them to tell us what they would like to do for a special topic. As they called out the topic we wrote them on the board and then we took a vote. Dinosaurs was the big hit and that is why we did that unit

Phil: Why do you think that is important to find out what the students want to know?

Karen: One of the main things that I look for is interest. If the kids are interested and if we can have fun and meaningful activities out of whatever it is that we want to do, then that is what I look for because something that I really strongly believe in is that they will only learn if they are interested (Conversation 1-9-93).

On a later occasion Karen related how both she and her teaching partner selected a topic which they considered had valuable knowledge content for the students to learn:

Phil: Why have you chosen this topic on the early history of Australia

Karen: Well we are just a bit concerned about children's views on Australia and the knowledge that we were talking about then was a bit more historical and talking about how Australia came to be the way it is today and the different kinds of cultures that make up Australia and I think that kind of knowledge is important.

I think it is knowledge that can contribute to different kinds of concepts that is important.

Phil: What concepts would they be?

Karen: Yes knowledge about the history of the Aborigines and the Europeans and the knowledge that Australia is not just made up of Anglo-Saxon people, well that brings about us to make evaluations and theories (Interview 26-3-94).

The concerns Karen expressed about the how and what of knowing were also reflected in the difficulties she experienced with assessing student knowledge.

ASSESSING STUDENT KNOWLEDGE

How Karen approached the task of assessing what the students knew, however, revealed that there was an ongoing tension between her beliefs about assessment and the multi-age philosophy of the school. Indeed this dissonance seemed to be indicative of an ongoing dilemma she was experiencing with catering for the knowledge needs of the individual in a non-graded setting. As Karen's following comments indicate she did change in her approach to assessment over the two years but that she didn't completely shift from grade-referenced to child-referenced assessment, either in her expressed beliefs or in her practices. Indeed it seems that she tended to oscillate between the two perspectives.

Karen expressed in late 1993 that she had become aware of catering for the needs of the individual and not comparing or contrasting them:

Phil: If you were transferred to a conventional school, what belief would you take with you from your experience in a multi-age school?

Karen: Well like teaching for the individual. Just that kind of thinking that children would be individuals and not comparing or grading them (Interview 6-10-93).

However as Karen explained earlier she felt constrained by parental expectations particularly when reporting to them on their child's progress. This concern in turn influenced how she assessed the students:

Phil: What dilemmas do you think may be hindering your approach in the multi-age classroom?

Karen: The only way I feel apprehensive is about parents because I know they have expectations. If we did not have parents there would be so much more we could do. It would be much easier to do what is ideal in multi-age.

Phil: What do you think that would be?

Karen: Well like with reporting. The parents are asking me where their child is in class, so I feel I have to show them the marks they got in the tests I give them and I can say their child is above the year level or average or whatever. I know we should not be giving them grade level tests but I think it is important for the parents. At least it gets them off my back but I don't think it is helping to individualise which is what I think multi-age is on about (Interview 15-7-93).

However, by early 1994 Karen had attempted to individualise the assessment process in a way that was more consistent with the philosophy of the school. As she explains:

Karen: I have really tried to individualise how I assess the students. Like I am not keen on comparing them or grading them, although the parents still are keen on having the children compared to others. I won't do that anymore (Conversation 8-3-94).

How Karen understood the assessment process is explained:

Karen: How efficiently children make use of their time. Social skills and adjustment and co-operative learning skills. Basic skills in all curriculum areas.

Phil: How do you assess?

Karen: In a portfolio for each child. Work samples, anecdotal records, the developmental continuum, resource and special reports, discussing with my teaching partner (Written response 6-7-94).

The process of assessment espoused by Karen was evident on numerous visits to her classroom. Karen made use of a portfolio system to monitor the progress of the students by indicating on the development continua for Maths and English the relevant levels

achieved by individual students. To support the continua other sources of evidence of students' work was also gathered by Karen, such as rough drafts of written work to show process, completed activities, self assessment of student's own work and testing carried out by Karen.

Despite Karen's claims that she did not compare, contrast and grade students, there was evidence to the contrary in the way she tested students to determine "where they were at." The following is typical of several testing sessions Karen undertook in which she used the results in a student-referenced way but also compared them with grade standards or peer standards:

After the morning talk Karen announced "I would like my group to move up to the other end of the room and sit in the conference area." After they had gathered Karen explained, "I want you to listen carefully while I give you these directions for our tests this morning. If you are a first year student I want you to complete this sound sheet. You have to have a go while you sound out what the picture says. You are not to bother me as I cannot help you. If you are a second year I have a Maths test for you. It is writing the numbers in tens and ones. For example if you have thirty four, you have to write three tens and four ones and then draw a picture. Since it is a test you must not talk about it. If you have a problem you may see me but I won't be able to help you with the answer. I want everyone working at their own desk and working quietly in silence (Observation 2-6-94).

Karen used this information to report back to parents, particularly when they requested special interviews. The difficulty Karen experienced in negotiating the two approaches to assessment was evident in the conversation she had with a parent:

Karen had receive a letter from Jessica's mother stating she was concerned with Jessica's progress and that the homework she was getting was too easy. Jessica was in her second year of formal schooling. However, as Karen explained to me before the interview, she had Jessica working in the first year

group as she wasn't at a second year standard yet. An interview was arranged. At the interview Karen had Jessica's portfolio in which were samples of her work including testing that was done with her sounds and Maths. Karen explained that Jessica had made some progress from the start of the year. "At the start of the year she was a lot worse. We have some second years who are working at a third year level. Jessica is Jessica and is working at her level. Her sounds are at a late grade one level and her reading is with the grade one students who are a little bit ahead of the other grade ones... I don't tell her she is not doing grade two work because that won't help her. I would suggest that you don't keep telling her she is a second year. Treat her as Jessica and not drilling into her that she is a second year (Observation 10-9-94).

The non-graded or student referenced approach to reporting was evident in the reports Karen sent home to parents at the end of the year. Her following report is on Lisa, a student who had social and emotional difficulties as a result of a dysfunctional family background. What also appears to be evident both in the following comments and Karen's earlier statements about assessment is that they were all made within a close time frame and therefore possibly indicate some ongoing degree of confusion and dilemma:

Lisa has come a long way this year, both academically and socially. She is a very capable student who unfortunately has taken most of the year to settle into a stable routine. Lisa has some difficulty with the limitations that exist in a classroom situation. Her awareness of these is improving as are skills in mixing with others. At times Lisa needs to remember to respect the rights of others. She is beginning to realise that they will accept her when uses appropriate behaviour with them.

Lisa has worked well in language. She has good sound recognition and she is starting to write well formed sentences. Sometimes Lisa needs to be more careful with her handwriting. In the integrated units Lisa is developing skills at a steady pace. Her topics are well researched and presented and she speaks well when delivering her presentations. We have found that she has difficulty working independently in project work.

Lisa displays solid numeracy awareness. She is competent in counting and has mastered the addition and subtraction algorithms. We firmly believe Lisa's

academic achievements are developing well as she becomes more at ease with working in the classroom (Observation 23-11-94).

CATERING FOR THE NEEDS OF THE INDIVIDUAL

The equivocation which seemed to be evident in Karen's approach to assessment was also apparent in the way she attempted to overcome the challenge of catering for the needs of the individual students within a multi-age setting. It seems that making a transition from a conventional mode of thinking, in which grade level thinking was dominant, to one in which the individual needs of the students in non-graded environment are pre-eminent, remained largely unresolved for Karen, even though significant changes had been made. This dilemma emerged once again towards the middle of Karen's second year in the school:

Phil: What are ongoing dilemmas that you have after eighteen months working in multi-age?

Karen: I am still really concerned about the first years.

Phil: Why is that?

Karen: Well it is still the same old problem. Like I really think the first year is so important and they really need to be in a routine. I know I have said this before, and maybe it is my problem, but they really have to know the basics and have to learn to read. Until they do they can't become independent.

Phil: So what would you like to do?

Karen: I was thinking that if I had a first year group next year I could run them as a multi-level group.

Phil: Do you think having twenty five to thirty first years would make a difference?

Karen: I really don't know. I would like to find out what the other teachers with first years do. At the moment it is driving me mad (Conversation 26-7-94).

Karen's comments about creating a "multi-level grade one" indicate that she has an ongoing dilemma about how to have the students move at their own pace until they had

the basics of reading in place. To assist Karen with the challenge of negotiating this dilemma a meeting was subsequently organised with the other teachers who had students in their first year of formal schooling. This meeting proved to be a difficult one for Karen as she confronted several issues which were troubling her:

Phil: Karen has requested this meeting so as to help her with ways to integrate the first years into the classroom. Could you let us know what ways to help?

Karen: I found that the first six months of last year and this year were such a big change to cope with and to integrate the first year. Some of the first years really freaked out because they thought they had to be doing what the second and third years were doing. I find that they just have to be taken away for things and it is not fair on the other students.

Jenny: Is that a big component of the day?

Karen: Yes it is because if they can't read it affects everything.

Rebecca: Well what I do is staple everything in a booklet for the first years.

Jenny: Is there a fear that they can't read? Is there an emphasis on the can't?

Could you change it around to what they can do?

Karen: Like with the Rigby Maths book, if they can't read they can't do the activities.

Jenny: Why don't you let them try and interpret what they think it means and then take it from there. How they have interpreted it is real for them.

Karen: I really find it hard when I compare where the first years are in comparison to the third years.

At this stage of the meeting Karen became visibly upset

Jenny: I think that what I am hearing here is that your emotional needs are not being met. Do you find having the double unit a problem?

Karen: I suppose in a way I do. I really don't know.

Jenny: I would find it really difficult to cater for fifty four individuals.

With this comment Karen left the room upset and did not return (Meeting 24-8-94)

Two days after this meeting Karen approached me again and expressed the need to discuss the meeting:

Karen: I am really under a lot of stress at the moment. Personal stress. I have a lot of expectations on myself and I really feel I am not doing a service to these kids. I know I said the double unit may be part of it, but I am not sure if that is all of it or part of it. I know I am going through a change but I am finding it so hard to let go. I know I am expressing the theory of catering for individual needs but I know I am not really doing it. Now I am not sure if I should stay here next year and see this change through or should I move down to the Gold Coast. I am really confused. I wish someone could tell me how to let go (Conversation 26-8-94).

What appears to have emerged from these meetings is Karen's need to know how to do what Jenny proposed, that is how to let the students try tasks which require reading to set up and maintain when they can't read. The recurring theme of "letting go" also reflects her lack of knowledge about how to teach reading other than through class-based instruction. It also seems that Karen had difficulty in coming to terms with the non-graded nature of the school and still felt compelled to classify students on a grade-referenced basis. However, as Karen acknowledges in her following comments, she had become increasingly aware during her time in a multi-age setting of attending to the needs of individual students:

Phil: What changes in your beliefs have you noticed since starting here?

Karen: Catering for the needs of the individual is certainly a big shift for me. I think the structure forces a change in your thinking. You have to change to survive. I mean I had to change the way I taught, like allowing the children to work in groups. It was difficult to change the structures so that I did not take charge of what went on all the time (Interview 7-7-94).

CHANGE BELIEFS

The need to survive had been an ongoing challenge for Karen as she attempted to reconcile her own belief orientation about teaching, learning and social relations with that underpinning the multi-age philosophy of the school. Karen's approach to change was driven not so much by desire to improve but rather the need to make sense of the

dilemmas that she was continually encountering. As Karen's story unfolded it became increasingly evident that the task of change was not an easy one, however despite the difficulties important changes had been made:

Karen: I think it is all the challenges that multi-age threw at me. I think if you do not go through that you get stressed and you do not know what to do. Unless you go through it you won't reach an understanding. I was quiet happy at the start of the year and I thought I knew what I was doing. I would not have had a change of my style of thinking. I would have just kept my old way of thinking. So you need to have a problem, you need to be stressed. I am still a bit funny on some of the things with multi-age and I guess I will just have to work through it. If I did not have that problem I would not have this way of thinking (17-11-93).

The need to develop self-reliant and self-regulating students was a significant change Karen undertook, along with the importance of organising authentic, purposeful learning tasks in which the students can exercise their knowledge, skills and attitudes. For Karen this involved shedding some of the power base that she considered had been the traditional domain of the teacher, but there were ongoing discrepancies and contradictions within her beliefs and that of the school, particularly when approaching the way she categorised individuals. However the need to change so as to overcome the challenges she encountered remained a strong and consistent one for Karen:

Phil: What do you think you need to change so you would be effective in a multi-age classroom?

Karen: I think there needs to be a change but I do not know how it is going to change. That is probably why I cannot understand what it is. I think there is so much that I could be skilled in, so much that I should know and do, but I do not know what it is. You could not really sit and think this is what I want to change, because then you would be changing it. You would be setting about changing it. If someone showed you like it was an inspirational thing and you thought, "Hey! I would like to be able to do that or incorporate it." See I am sure there is so much especially to do with multi-age and individualised learning that I wish I could kind of incorporate it, but I do not know what it is.

Phil: Do you find it a bit of a catch twenty two situation?

Karen: Yes I am sure there are ways I could change and grow and get better at this and that, but I do not know what it is, whether it comes to me or I go to it (Interview 11-1-94).

The approach to change adopted by Karen acknowledges the importance of questioning her own practice and investigating ways of creating a more relational and interactive context for teaching. This approach to change appears to emphasise the need to foster an experimental attitude towards practice and initiate and sustain ongoing inquiries within the classroom about the learning of individual children in order to inform practice. This approach also appears to assume that Karen is attending to her own conceptual change at least as much as attends to this process in the students. So as to assist in the process of change Karen began to look for ways of seeking inspiration, particularly by talking with others. As she comments:

Phil: How would you like to reflect on problems you have with multi-age?

Karen: Well I think reflection time is very valuable, if it can be done with others. I mean I don't know how I am going to go in a classroom myself because I need to talk about things all the time. I think a lot of reflection, for me personally anyway, the way I do it is that I have to talk out stuff (Interview 11-11-94).

The changes that Karen experienced over the two years of this study focused on her need to catering for the knowledge needs of the individual. What seemed to remain constant was her beliefs about the importance of providing a caring environment in which the integrity of the individual remained central.

BELIEF ABOUT RELATIONSHIPS

Karen's interest expressed during her second year, in creating a mutually constructed caring community within the classroom was reflected in the image she held of the family grouped classroom, notwithstanding her retention of three distinct year levels:

Karen: I still feel the classroom has the family concept even though it has the three year levels. As like in a family you have different age levels and various developmental stages. I think there is an identification in family groupings, you know a place where you belong and get emotional support. It is like a house, you have somewhere to go to. There is also discussion where everyone gets to say their piece. There is modelling also, especially for the first years. It is like they can see where they are going, especially where they are going to be in three years time. I don't think that you can do that for them if you only have them for the one year (Interview 15-6-94).

Karen's beliefs about relationships reflected a perspective in which the telling-listening relationship between teacher and student is avoided in favour of a relationship that is more complex and interactive and where there is an interest in what is happening to the student as a person. As Karen explained early in 1993:

Karen: I find I am really conscious of caring for the children, especially with the topic we are doing now on food. It has really made me think because of their own background. I really feel a lot of them are coming from really deprived backgrounds, like poor Chloe. You just think who cares what letter of the alphabet it is and what sound it makes (Interview 24-4-93).

Karen also noted how she saw a relational environment developing within in the classroom which was characterised by personal autonomy, mutual respect, co-operation and reciprocal interest:

Karen: I have really been impressed with the way the social relations have developed in the class. Just recently I have started getting the older kids in the class to sit at the tables with the younger children and I have been able to think through that. A lot of the boys, the older boys sit at the tables like older brothers and that is nice to watch them. I am thinking of Mark sitting next to Kathleen and he had done all his contract pages for the week, so he was free to do whatever and he was sitting next to Kathleen and I have never seen them

... speak to each other and he was helping and explaining how to do an add on. She does not have an older brother and it was really nice to see that kind of interaction. That was nice and I think the time he took to do that. Kathleen most probably learnt more than with me standing up the front and teaching (Interview 17-10-93).

Karen observed how the essential elements of a multi-age philosophy, which valued co-operation and the mutual construction of a community, were consistent with the kind of society she would like to see develop:

Phil: What kind of society would you like to see develop?

Karen: Here in the school we have got a social structure that is built upon developing co-operation and building community which is working for each other. I would really like to see this kind of society outside the school. Yes I think it does filter down into the kids' social groups and out in the playground. Like what I was saying to you that time about how they have soccer games and other games and all superimposed on top of each other and nobody ever fights. I can see that in my own social group. There are isolated incidents but overall it is a peaceful class. I think this is what society should be like (Interview 11-11-94).

Significant in Karen's comments is the acknowledgement that her role in the teaching-learning relationship has to certain degree been relinquished over the two years and she no longer aspires towards total control over her students. Rather Karen can express her fundamental need to care for the students whilst simultaneously allowing them to take some responsibility for what they learnt and with whom:

Phil: What beliefs have you changed over the two years?

Karen: I have to start scaffolding, helping them to succeed. I guess also the other thing that has changed is where I used to think that children should be doing and knowing things at certain ages and now I am accepting more and more that they are individuals and they will only do what they want to do and when they are ready and not because of the syllabus. They might start at the

beginning of the year at a very accelerated rate of learning and then they might stop for a while and it is not always because of me... what I have also found I suppose is giving them a means for finding out what they want to know and things they want to do (Interview11-11-94).

At the end of her second year at the school, Karen made a decision to move out of the area for personal reasons that were not associated with the school.