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University of Alberta

Teaching in inclusive classrooms in secondary schools: A study of teachers' inflight thinking

by

David Leonard Paterson

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of Doctor of Philosophy

in

Special Education

Department of Educational Psychology

Edmonton, Alberta
Spring 2000

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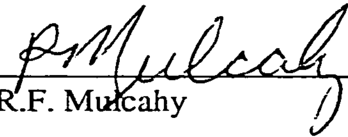

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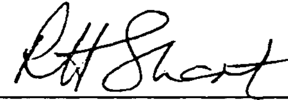

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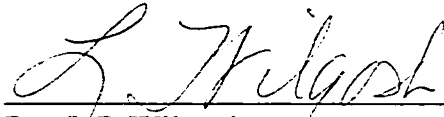

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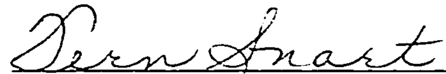

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ABSTRACT

This study investigated the nature of the thinking of five junior high school teachers as they were engaged in teaching in inclusive classroom contexts. These thoughts were referred to as "inflight" thoughts.

In a qualitative manner, the study examined the guiding principles and inflight thoughts of five teachers and from this information examined the relationships between teacher thinking and inclusive schooling in the complex secondary context. It is asserted that the context of instruction has particular relevance as students who first experienced inclusive education in elementary contexts now enter secondary schools, organisations which are already involved in the process of educational reform.

Central to this study was the belief that inclusionary practices in schools have the greatest impact on regular classroom teachers who have had little or no special preparation for those practices. Rather than focussing only on observable teaching activities, insights into ways these teachers make sense of the complexity in their classroom can be obtained by examining their thoughts.

While no claims are made concerning the generalisability of this examination, some observations can be made about the thinking of these particular teachers. The five teachers all acknowledged and attended to the individuality of students in their classes in a manner apparently unrelated to student categorisation. Inflight thinking appeared to involve the students with special needs no more or less than any other student in the class. Further, during the course of each lesson, their inflight thoughts were characterised by a strong affective element as they reported a series of emotional highs and lows.

The paper concludes with some observations on the implications of this study for the practice of teaching in inclusive settings and for the preparation of classroom teachers for inclusive schooling. It is suggested that the thoughts of regular classroom practitioners, as they teach, may be more truly inclusive than their observable actions suggest and that in the professional development of regular classroom teachers, attention to student difference should be replaced by attention to individuality and to the affective needs of both students and teachers.

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TABLE OF CONTENTS

CHAPTER ONE - INTRODUCTION 1
Statement of the Problem 1
Significance of the Problem 1
Rationale for Solution of the Problem 10
Chapter Summary 12

CHAPTER TWO 13
Introduction 13
Inclusive Education 13
Evolution 13
Pragmatic Considerations In Inclusive Education 14
Effective Schools And School Reform 15
Effective Classroom Practices 17
Conclusions of Research in Inclusive Practice 18
Teacher Thinking 20
Construction and Deconstruction 21
Conceptualising Teacher Thinking 24
Instructional Context of Teacher Thinking Research 28
Connecting Teacher Thinking and Inclusive Education 30
Chapter Summary 32

CHAPTER THREE - METHOD 34
Introduction 34
Participants 34
Description of Participants 34
Selection of Participants 36
Data collection 39
Researcher Fieldnotes 39
Semistructured Interviews 40
Stimulated Recall Interviews 42
Combination of Techniques 48
Data Analysis 53
Process of Analysis 53

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Single Case Analysis 53
Context. 54
Guiding principles. 54
Inflight thoughts. 55
Relationships between guiding principles and inflight thinking. 56
Cross-Case Analysis 56
Rationale for Data Analysis Procedures 56
Authenticity 57
Triangulation 57
Member checking 58
Clarifying researcher perspectives 58
Thick descriptions 58
Consistency 59
Clarifying researcher perspectives 59
Clarifying the procedures 59
Triangulation 60
Summary 60
Procedures 60
Stage One: Gaining Entry 61
Stage Two: Pre-Teaching Data Collection 61
Stage Three: Lesson Recording 61
Stage Four: Post-Teaching Data Collection 62
Ethical considerations 62
Explanation of the Nature and Purpose of the Research 63
Participants 63
Students 63
Informed Consent 64
Participants 64
Students 64
Provisions for Withdrawal from the Study 64
Confidentiality and Anonymity 65
Courtesy 65
Chapter Summary 66

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CHAPTER FOUR . . . 67
An Introduction to the Case Studies . . . 67
Case Study One - Laurie . . . 68
The Teacher . . . 68
Focussed Life History . . . 68
A personal profile . . . 68
Teaching information . . . 70
Guiding Principles . . . 72
About teaching in general . . . 72
About inclusive education . . . 76
Summary . . . 78
The Teaching Context . . . 79
The School and the Class . . . 80
The Lessons . . . 81
Nature of Laurie's Inflight Thinking . . . 83
Characteristic One - "Heart thinking" . . . 84
Heart thinking and observable events . . . 85
Heart thinking and students . . . 86
Heart thinking and Laurie's own feelings and emotions. . . . 87
Characteristic Two - "You guys!" . . . 88
Students as indicators . . . 90
Characteristic Three - This Lesson . . . 91
Teaching techniques: Monitoring . . . 91
Teaching techniques: Give them a chance (taking a risk) . . . 92
Teaching techniques: Making connections . . . 93
Teaching techniques: Evaluating . . . 94
Making choices . . . 94
Lesson flow . . . 97
Lesson content . . . 97
Purpose . . . 98
Summary of Characteristics . . . 99
Relationships between Guiding Principles and Inflight Thinking . . . 100
Developing the Inner Child . . . 100
Sense of Identity . . . 101

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Safety and Risk 102
Honesty and Awareness 104
Chapter Summary 105

CHAPTER FIVE 107
Case Study Two - Denise 107
The Teacher 107
Focussed Life History 107
A personal profile 107
Teaching information 110
Guiding Principles 112
About teaching in general 113
About inclusive education 117
Summary 119
The Teaching Context 120
The School and the Class 120
The Lessons 121
Nature Of Denise's Inflight Thinking 123
Characteristic One - Facilitating Learning 123
Monitoring and evaluating 124
Making connections 126
Considering alternatives 127
Characteristic Two - Concern for Individuality 130
Recognition of individuality 131
Meeting individual needs 131
Predicting and anticipating student responses 132
Characteristic Three - 'Person Thinking' 133
Concern and frustration 133
Pleasure and surprise 134
Characteristic Four - Lesson Progress 134
Time as a finite resource 135
Flow of the lesson 135
Summary of Characteristics 137
Relationship Between Guiding Principles and Inflight Thinking . . 137
The Role of the Teacher is to Facilitate Learning 137
Being Conscious of Student Individuality 139

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Keeping In Touch With Each Student 140
Encouraging Challenge 141
Developing A Sense Of Responsibility 142
Chapter Summary 143

CHAPTER SIX 144
Case Study Three - Lysander 144
The Teacher 144
Focussed Life History 144
A personal profile 144
Teaching information 147
Guiding Principles 149
About teaching in general 149
About inclusive education 154
Summary 155
The Teaching Context 157
The School and the Class 157
The Lesson 158
Nature Of Lysander's Inflight Thinking 159
Characteristic One - Instinctive Teaching 160
Reactive teaching 161
Proactive teaching 163
Predictive teaching 165
Characteristic Two - 'No Problem' 166
Characteristic Three - Explicit Teaching 167
Drawing them out 168
Making connections 168
Facilitating comfort and success 169
Reinforcing 169
Characteristic Four - Lesson Thinking 170
Summary of Characteristics 171
Relationships between Guiding Principles and Inflight Thinking . . 171
A Positive Environment 172
Accepting Responsibility 174
System and Order 175
Clarifying Expectations 177

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Instruction and Ability 178
Being Direct and Honest 179
Chapter Summary 180

CHAPTER SEVEN 181
Case Study Four- Max 181
The Teacher 181
Focussed Life History 181
A personal profile 181
Teaching information 184
Guiding Principles 186
About teaching in general 186
About inclusive education 192
Summary 194
The Teaching Context 195
The School and the Class 195
The Lessons 196
Nature of Max's Inflight Thinking 197
Characteristic One - Teachers and students 198
Identity of the teacher 198
Identity of the students 199
Characteristic Two - Lesson Structure 201
Intentions 201
Opportunities 202
Future teaching 203
Characteristic Three - Active Teaching 205
Learners 205
Content 206
Connecting 208
Characteristic Four - Observing The Process 210
Future events 210
Current or past events 211
Summary of Characteristics 214
Relationships between Guiding Principles and Inflight Thinking . . 214
Sense of Direction 215
The Travellers 216

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The Teaching Instrument 219
Chapter Summary 220

CHAPTER EIGHT 222
Case Study Five - Christine 222
The Teacher 222
Focussed Life History 222
A personal profile 222
Teaching information 225
Guiding Principles 227
About teaching in general 227
About inclusive education 230
Summary 232
The Teaching Context 233
The School and the Class 233
The Lessons 234
Nature of Christine's Inflight Thinking 235
Characteristic One - Elements of Teaching 236
Overall planning 236
Lesson content 238
Pace 239
Choices 239
Characteristic Two - Individual Thinking 241
Knowledge of the individual 241
Engaging the student 242
Student thinking 243
Characteristic Three - Participant Observation 244
Monitoring 244
Affective thoughts 245
Interpreting 246
Evaluating 247
Characteristic Four - Thinking Ahead 248
Anticipating 249
Hoping 249
Summary of Characteristics 250
Relationships between Guiding Principles and Inflight Thinking . . 250

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Engagement and Participation 251
'Getting It' 253
Acknowledging Student Individuality 255
The Learning Environment 258
Chapter Summary 259

CHAPTER NINE 261
Introduction 261
Issues Emerging From The Five Case Studies 261
Relationships Between Inflight Thoughts and Guiding Principles . . 261
Affect 264
Individuality 267
Emotional Self-Defence 272
Roles of Teacher and Student 275
Concluding Comments 276
Hypotheses Emerging From This Study 278
Hypothesis One 279
Hypothesis Two 279
Hypothesis Three 280
Hypothesis Four 280
Hypothesis Five 280
Hypothesis Six 281
Chapter Summary 281

REFERENCES 282

APPENDICES 296
Appendix One 296
Statement of professional perspectives 296
Appendix Two 298
Guidelines for distinguishing between interactive and non-interactive data 298
Appendix Three 301
Letter to school principals 301
Appendix Four 304
Information Letter For Prospective Participants 304

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Appendix Five 306
Letter Of Consent For Participants 306
Appendix Six 307
Draft Information Note For Parents 307

LIST OF TABLES

Table One. Details of participants 36

LIST OF FIGURES

Figure 1a and 1b Triangulation of data 49
Figure 1c and 1d Triangulation of data 51

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CHAPTER ONE - INTRODUCTION

Statement of the Problem

This investigation identified critical issues emerging for those seeking to implement policies of inclusion in junior high school grades - - the middle years of schooling. In particular, this study was designed to investigate the guiding principles and inflight thoughts of five junior high school teachers who taught in an inclusive context.

Inclusive models of education, having originally been implemented in elementary schools, are beginning to seriously impact on the professional lives of teachers at the secondary school level. Although some knowledge has been accumulated as to the way inclusion has been incorporated into the practice of elementary school teachers, it is still unclear what this incorporation will look like for secondary school teachers. Thus, it remains to be seen whether inclusion, usually conceived as appropriate education for *all* students in the context of the same heterogeneous class, will be incorporated into secondary schools at all, and what form it might take if, indeed, it is established there.

To understand the way an innovation becomes incorporated into the practice of an organization, it is necessary to understand the way that individuals make sense of that innovation in their own professional lives. One way of doing this is by examining the thoughts of those who are currently implementing that innovation. With regard to inclusion in secondary schools, this means, examining the thoughts of teachers who are currently implementing inclusive practices in their own classrooms. From this examination, it may be possible to develop ways of effectively supporting those teachers, and methods of preparing those who have yet to experience this innovation in their professional lives.

We know something about the thinking of secondary teachers as they teach particular subjects. We do not, however, have any information about the thinking of those teachers as they teach in inclusive classrooms. The current investigation was designed expressly to address this issue.

Significance of the Problem

Policy and practice regarding the education of students with disabilities have evolved considerably over the past thirty years. Although, by the mid 70s, most school

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systems in the Western world had made provisions for students with disabilities, those provisions were usually in the form of segregated placements (Dempsey & Foreman, 1995; Fuchs & Fuchs, 1994; Mittler, 1995). Such placements were often in schools or classrooms physically removed from the schools and classrooms of the majority of students. Gradually, however, education systems began to consider other ways of meeting the educational needs of students with disabilities - - ways which might involve less segregated educational placements (Fuchs, Fuchs, & Phillips, 1994). This trend, however, did not develop without considerable resistance from some sectors of the educational and wider community, and development was not universally applied to all students with special needs.

Thus, integration of students with disabilities into schools and classes with their non-disabled peers was the focus of reform in the 1970s. While there were several sources of motivation for this reform, major public documents in the U.S.A., "Education for All Handicapped Children Act, (PL 94-142)", and in the U.K.,"Warnock Report (Department of Education and Science, 1978), meant that education authorities could no longer choose to ignore the educational needs of students with disabilities.

At that time, however, most education authorities addressed this issue by providing increased attention to the efficiency of special educational settings; education of students with disabilities in regular classes was seen as an option only for a select few. In subsequent years, other concepts, such as that of the least restrictive environment (LRE), began to impact on special educational policy. Based on an understanding that some educational environments are more restrictive than others, the LRE implied that it is desirable that students be educated in the environment which offers the most choice and which is the least restrictive. A more radical approach was the Regular Education Initiative (REI), a concept proposed by the then Assistant Secretary of Education and head of the Federal Office of Special Education Programs, Madeline Will (Will, 1986a). At the core of this approach was a belief that a single educational system, appropriately reformed, would be able to recognize the diversity of all students and meet their needs in a more efficient manner than would two systems, i.e., special and regular education.

The motivation for these developments (the "awakening", LRE, and REI) has been described (Dyson, 1997) as a coming together of three main strands. The first strand was a growing realization that there were few educational or social outcomes offered in segregated educational settings that could not be offered in regular settings. The second strand was a more pragmatic line, in which developments in the practice of

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instruction meant that regular schools were better able to meet a range of educational needs. Finally, and related to the developments in special education,was a realization that education in segregated and specialist settings was often a costly alternative to regular education.

The inclusive schools movement may, on one hand, be seen as a logical development of the integration movement, which both preceded and runs parallel to it. It is, at least at a philosophical level, the end point of a sequence which began with the total exclusion of students with disabilities. On the other hand, inclusion may be conceptualised as having a different focus; "a matter of human rights with which professionals are obliged to comply" (Dyson, 1997; Lipsky & Gartner, 1996). The key features of inclusion may be seen in the 1994 Salamanca Statement (UNESCO, 1994), and it is within the context of this Statement that current discourse regarding inclusion takes place. Issues of transition from more to less segregated environments, as determined by professionals, are gone; the leadership role of schools in the process of social change is emphasised.

> *Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society, and achieving education for all; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire educational system.* (UNESCO, 1994, par. 2)

Thus, school systems in both developed and developing countries have, at least notionally, accepted the sentiments of inclusive education (Baker & Zigmond, 1995; Mittler, 1995; Sebba & Ainscow, 1996). Policies and provisions for special education are increasingly impacting on the professional lives of those in regular education as efforts are made to bring the two "systems" together (Idol, 1994; McKinnon, Gordon, Bentley-Williams, Prunty, & Finlay, 1997; McRae, 1996; Minke, Bear, Deemer, & Griffin, 1996; Zigmond, 1995a). There is, however, a scarcity of information regarding the impact of these policies in practice. It is clear that the traditional roles of special educators are changing from that of teacher to that of consultant, collaborator, or resource person (Carrington, 1993; Davis & Kemp, 1995; Dyson, 1990; Glatthorn, 1990; McKinnon et al., 1997; Minke et al., 1996; Voltz, Elliott, & Cobb, 1994; Westwood & Palmer, 1993). However, much more attention has been paid to the role of special

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educators than to regular classroom teachers even though it is the regular classroom teachers who have been taking an increased responsibility for teaching students with diverse learning needs.

In an inclusive education system, it is critical that regular classroom teachers be appropriately prepared for a context in which they will be teaching students with special needs. It is known that while most teachers support the right of students to be educated in regular classes, they typically lack confidence in their own ability to meet the needs of all students in those classes (Baker & Zigmond, 1995; Vaughn & Schumm, 1995). Particularly in times when financial resources to support inclusion are scarce, there is a need for a more deliberately focussed attempt to address the professional development of teachers. More focussed professional development, however, assumes that the key variables in the development of "inclusive teachers" are known. This is not yet the case. Because there have been so few studies of the work of teachers in inclusive classrooms, little is known about the variables that operate in those contexts and hence little is known about future directions for professional development.

It has been noted (Fuchs & Fuchs, 1994) that much of the impetus for an inclusive model of schooling has come from lobby groups representing parents of children with disabilities. It is hardly surprising, then, that much of the successful inclusion has occurred in the context of early childhood and elementary education, educational levels where there is a closer connection between families and schools (Conn-Powers, Ross-Allen, & Holburn, 1990; Udell, Peters, & Templeman, 1998). Indeed, the majority of information about the way that inclusion is actually implemented relates to elementary schools. That is, the parent lobby groups which have successfully fought to have their young children included in regular schools continue to be the most strident voice in the maintenance and development of inclusive policies. Indeed, it follows that these parents, having developed an experience of inclusive schooling, might now be expecting some continuity for their children as they enter the middle school years.

The problem is that very few examples of empirical studies exist, which explore the current practice of inclusive education in secondary schools. There are at least two reasons for this; one is that there are very few examples of fully inclusive school systems available for investigation. The other is that much of the discussion about inclusion has revolved around defining the distinctive features of inclusion and establishing its place in the social justice agenda. Moreover, of the studies that have been conducted, the vast majority have been related to elementary school settings (Baines, Baines, & Masterson,

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1994; Baker & Zigmond, 1995; McDonnell, McDonnell, Hardman, & McCune, 1991). One finding of these studies has been the individuality of experiences; those of schools, teachers, and students. Another has been that inclusive practices have largely been additive in nature (Baker & Zigmond, 1995; Pugach, 1995), attempting to implement inclusive practices within an existing framework with consequent increases in the complexity of teaching and stress for teachers. Similar issues have arisen in literature examining reform of the middle years of schooling, inevitably the next educational environment for students currently in elementary schools (Felner et al., 1997; Hines & Johnston, 1996; Lipsitz, Jackson, & Austin, 1997; Task Force on Education of Young Adolescents, 1989). In these secondary contexts, reformers have cited a need for small, personalised communities for learning which re-engage the family and broader community, and ensure success for all (Felner et al., 1997). The individuality of schools, noted in the elementary inclusion studies, appears to be a feature of education which is being increasingly recognised and encouraged.

The practice of inclusion in junior high school grades is, therefore, an area of inquiry which is of critical importance to students and teachers, but one about which very little is known.

If inclusive school practices are likely to impact on secondary schools, it is important briefly to review what is known about instruction in those contexts. One of the first, and most obvious, observations that can be made relates to the role of secondary schools in preparing students for post-school life. It is in secondary schools that skills and knowledge, cultivated during the elementary years, are refined and developed with an awareness of the need for students to leave school able to continue learning for themselves.

However, it is important to note that, since secondary schools reflect the complexity of society, they are themselves increasingly complex educational environments. Thus, there are a range of issues that emerge in secondary schools that are not evident in earlier years of schooling. Some of these relate to the development of individual students, others to the structure of secondary schools, i.e., their administration and role in a broader society, still others to expectations of the community (Felner et al., 1997; Task Force on Education of Young Adolescents, 1989). Given this complexity, it is clear that innovations being introduced into this environment must avoid being additive in nature. Since the critical role of secondary schooling in the economic and social development of a community has been recognised, secondary schooling has become a

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target for innovations designed to meet the needs of different "interest groups;" industry, health and social welfare, technology, etc. Rather than adding these different strands to existing curricula, schools are instead seeking ways of incorporating innovations into existing structures or inventing new structures which will incorporate those innovations (Pugach, 1995).

Reflecting the complexity of the observable environment, the less observable thoughts of teachers in that environment are characterised by their complexity. Thus, it is an assumption of the current investigation that teaching is a complex cognitive process which takes place in a relatively ill-structured, dynamic environment (Leinhardt & Greeno, 1986; Shavelson & Stern, 1981). Study of instruction in individual classrooms is one way of gaining insights into the complexity of schooling. In one conceptualisation of classrooms (Biggs, 1991), factors which exist prior to instruction are of two kinds: those relating to students, and those relating to the teaching context. The methods that teachers use and the way that the lesson is structured are aspects of this teaching context. The observable practices of teachers have been extensively studied and there exists a considerable body of research concerning effective instruction (Rosenshine & Stevens, 1986; Walberg & Wang, 1987). However, investigations into the less observable thoughts of teachers in those contexts are less common. Nevertheless, it is acknowledged that it is both teachers' thoughts and actions which facilitate student learning (Clark & Peterson, 1986; Joyce & Showers, 1988; Mitchell & Marland, 1989). And, there is no doubt that an interactive relationship exists between these thoughts and actions. In other words, teachers' actions are guided by their thoughts which, in turn, are influenced by their actions (Borko, Livingston, & Shavelson, 1990; Clark & Peterson, 1986; Costa & Garmston, 1995; Elbaz, 1990; Korthagen & Lagerwerf, 1996).

Teacher-thinking research has made significant contributions to an understanding of instruction, since its origins in the early 1970s. Since that time it has, however, tended to focus more on the thoughts of teachers before and after the teaching event than on thoughts during that event. One way of representing this distinction (Clark & Peterson, 1986) has been by describing two categories of teachers' thoughts. The first of these is planning, theories and beliefs. The second relates to interactive thoughts, those which occur during the teaching event. Clearly these categories of thinking are not temporally distinct; theories and beliefs exist while teachers are planning, plans affect interactive thought (Marland, 1986). Investigations of ways that teachers plan for instruction, and reflect on those thoughts subsequent to lessons have been extensively studied (Clark &

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Peterson, 1986; Flick, 1996; Fuchs, Fuchs, & Bishop, 1992; Fuchs et al., 1994; Glatthorn, 1993; Lewis, 1992; Schumm et al., 1995). One of the key findings from this research has been that finer details of teaching, such as the things that a teacher will say or do during a lesson are unpredictable and not planned. Teacher plans are likely to move into the background once the lesson begins (Clark & Peterson, 1986). This movement into the background has been explained by research into the effect of cognitive schemas in the organization of complex information (Leinhardt & Greeno, 1986; Rumelhart, 1980; Shavelson, Webb, & Burstein, 1986). In the main, the research has suggested that teachers reduce the cognitive complexity of the classroom by making use of different types of schemata to summarize existing knowledge and enable rapid access to information in novel situations (Borko et al., 1990; Calderhead, 1983; Clark & Peterson, 1986). Plans, in this context, form part of a teacher's schema about instruction, and hence operate in the background as the teacher engages in instruction (Leinhardt & Greeno, 1986).

Similarly, research into teachers's beliefs and personal theories of action (Carlgren & Lindblad, 1991; Clandinin & Connelly, 1986; Engeström, 1994) has indicated that teachers' subjective theories about teaching have multiple sources and, while constantly evolving, form another aspect of the background to teaching described earlier. It is acknowledged (Clark & Peterson, 1986), though, that examination of these theories is critical for a more general understanding of teacher thinking. Thoughts before, during, or after instruction, clearly interact according to the context in which they occur (Elbaz, 1990).

There have, however, been a limited number of studies conducted which have looked specifically at the thinking which takes place during a lesson, sometimes referred to as interactive thinking. There have been some studies which have examined teacher thinking from a more general perspective (Colker, 1982; Marland, 1977). Others have tended to focus on particular aspects of instruction. The most common of these has been the way that teachers make decisions during instruction (Butefish, 1990; Calderhead, 1981; Roe, 1991; Shavelson, 1983; Wodlinger, 1980). Another has been the way that teachers use questions and structure information for learning (Butefish, 1990; Mitchell & Marland, 1989). Yet another has been to look at instruction in particular subject areas, often science (Butefish, 1990; McGinnis, Yeany, Best, & Sell, 1993; Moallem, 1998; Parker & Gehrke, 1984). These studies have confirmed the complexity of teacher thinking and provided some conceptual frameworks for understanding that thinking.

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Despite a recognition that the greatest percentage of teacher reports of their own thinking were concerned with the learner (Clark & Peterson, 1986), and despite a recognition that students are a fundamental factor in the classroom context, only one study (McGinnis et al., 1993), has specifically examined teacher thinking in classrooms where the diverse characteristics of the students was a factor. Diversity of students in this study was in relation to cultural backgrounds. The key finding was that, in only a few discrete instances, were the teachers' decisions influenced by the students' cultural backgrounds despite teachers' recognition of the students' cultural diversity. The teachers, during the lessons, deliberately excluded consideration of student diversity because "they believed that would lead to promoting separatism" (McGinnis et al., 1993, p. 51). No other studies, however, have attempted to explore this thinking about student diversity. Existing studies of interactive thinking, then, have focused on details of teacher decision making processes and the content of teacher thought in lessons contextualised by subject area. Few have addressed teacher thinking in classes contextualised by different student characteristics. Further, there have been fewer studies conducted in secondary classes [Galluzzo, 1992 #610; Mitchell & Marland, 1989; Moallem, 1998) than at the elementary level. In addition, there is little understanding of the factors which shape individual teachers' thoughts during instruction. Therefore examination of schemata and subjective theories help to explain a process by which teachers deal efficiently with large amounts of information but, as yet, relationships between these theories and the thinking that takes place in the classroom are not clear.

Teacher thinking is essential to consider in the context of organisational change itself. It is important because inclusion in schools can only become incorporated into the routine practices of an educational system if the grass roots classroom teacher makes the necessary conceptual adjustments, incorporating inclusionary thinking into his/her teaching practice, within the constraints of that organisational system. What is known about change in educational organisations, then, becomes critically important in this context. The teachers, then, are those who are critical factors in the process of change because they are the ones who respond on a daily basis to the needs of increasingly heterogeneous groups of students in their classrooms.

Three main phases have been identified in the process of organisational change; initiation, implementation, and continuation (Anderson, 1993; Berman & McLaughlin, 1978; Fullan, 1991; McLaughlin & Marsh, 1978). Since some school systems have already, at least nominally, embraced the principles of inclusion, it might be asserted that

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the initiation phase, a process leading up to and including a decision to proceed with a change, has already been passed. Implementation involves the first experiences of attempting to put an innovation into practice. However, at a global level, there are multiple examples of inclusion being implemented (Baker & Zigmond, 1995). The critical phase is the final phase of continuation, the phase in which change is built in as part of the system or disappears. It has been suggested by Gerber (1995) that what is being experienced in some systems represents the "high water mark" of inclusion and that further incorporation is unlikely without significant structural change (McRae, 1996).

An innovation which is characterised by high degrees of complexity and lack of clarity is regarded as potentially problematic in the process of change (Berman & McLaughlin, 1978; Fullan, 1991; Ungerleider, 1993). Implementation becomes more difficult when the innovation is highly complex and when the precise nature of the change is not clear to those involved in the innovation. Both of these characteristics are present in the case of inclusion and, hence, at issue is the form that change will eventually take. But the key issue is those people who are actually involved in the implementation and continuation of the change. That is, at a system level, while the role of those providing administration and support to the change is critical, in the final analysis "change works or doesn't work on the basis of individual or collective responses to it" (Fullan, 1991, p. 46).

The implementation of inclusion will inevitably create new and increased demands on teachers, at least in its early stages. We know, for instance, that teachers most frequently relate to the class as a whole (Goodlad, 1984; Rosenholtz, 1989). In an inclusive classroom, however, the teacher could expect to have a more diverse range of students, who may not reasonably be considered as a single homogeneous group. At an individual level, despite recognizing the critical role of the teacher in this process, we do not know how these demands are prioritised, integrated with existing knowledge, and incorporated into instructional practice. It has been noted that the process of change may even be subverted, either deliberately or accidentally, if it appears to threaten the current practices of individuals (Ungerleider, 1993). We know that while most teachers support the right of students to be educated in regular classes, they lack confidence in their own ability to meet the needs of all students in those contexts (Baker & Zigmond, 1995; Schumm & Vaughn, 1995). In short, to ignore the role of teachers and their understandings of inclusive practice is to put at risk the continuation of inclusion in schools.

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Rationale for Solution of the Problem

The identification of issues, arising from inclusive practices in secondary schools, is a complex and highly contextualised problem requiring a detailed examination of individual experiences. From research into inclusion in elementary schools and research into organisational change, two key issues emerged which informed the current investigation. The first was the importance of individual teachers' interpretations of inclusion in practice. The extent to which an organization can make substantive and long term change is largely based on the incumbent practitioner's willingness and ability to incorporate that change into his or her own sense of professional identity and, indeed, his or her own professional practice. It is at that point that the change actually becomes well entrenched and can then have a natural evolution and continuation into the future. Thus, the present study was specifically designed to explore the ways that teachers at secondary level deal with that change at an individual level, to reveal characteristics of their inflight thought, and to examine those characteristics in the context of relationships with their guiding principles.

The second key issue was the role of the secondary school context. Inclusionary practices have been implemented in a number of elementary schools and, while some information is known about inclusion in this context, it is not known whether that knowledge can be bridged to secondary school contexts.

This study, therefore, was designed to explore these issues in the context of teachers' thoughts during their natural teaching under inclusive conditions, such that issues would emerge directly from the teachers themselves in the light of their thoughts during the teaching-learning process. The method was built using a case study approach with semistructured interviews, stimulated recall interviews, and researcher fieldnotes triangulated within that approach. A case study approach was chosen because of the capacity of case studies for understanding complexity in particular contexts (Merriam, 1988; Simons, 1996). Identification of issues and formulation of hypotheses were expected outcomes of the investigation and, while it was anticipated that some hypotheses would be related specifically to issues of inclusion in junior high schools, it was acknowledged that others might be of a more open nature and not able to be predicted prior to the investigation.

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Having identified a method which would appropriately address the general features of the research problem, ways of addressing more specific features were selected. These were: a) access to the thinking of teachers in inclusive junior high school classes—contexts in which the process of change was under way, b) reliable and truthful representations of inflight thought and of guiding principles, c) examination of inflight thoughts in the context of relationships with guiding principles, and d) identification of hypotheses which might, once explored, yield valuable information regarding the preparation and support of junior high school teachers in inclusive classrooms.

Since knowledge relating to inclusion in secondary school contexts is not well understood, it is necessary to have access to secondary schools in which inclusive practices are being implemented. Thus, in the present investigation, teachers were interviewed, observed, and videotaped, as they worked in inclusive junior high school classrooms. In these classrooms, it was possible to examine the change process in its implementation or continuation phases. In order to have access to unobservable thoughts, it was necessary to find participants who, while experiencing the phenomenon, were both willing and able to articulate that experience. For this reason, a purposive sampling method was selected.

To understand personal interpretations of teaching in inclusive classrooms, it was necessary to have access to unobservable aspects of a teacher's professional knowledge; his/her guiding principles and inflight thoughts. To ensure that representations of inflight thought and guiding principles would be both reliable and truthful, stimulated recall and semistructured interview methods were used in conjunction with researcher fieldnotes. The data derived from these three sources was triangulated (Denzin, 1978), such that the potential limitations of one source would be compensated for by the other two.

To identify relationships between inflight thoughts and guiding principles within each case study, an inductive process of analysis was undertaken. In this process a participant's guiding principles and characteristics of his/her inflight thought were simultaneously examined. An expectation of this examination of inflight thoughts, in the context of guiding principles, was that guiding principles may or may not be evident in inflight thoughts and, further, simultaneous examination may yield insights into both inflight thoughts and guiding principles that were not evident through examination of each process by itself.

Finally, in order to assist in the identification of hypotheses relevant to the preparation and support of teachers in inclusive classrooms, the research design included

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a cross-case analysis. In this technique, guiding principles, characteristics of inflight thinking, and relationships derived from single case studies, were reviewed. It was expected that, through this process, further light would be shed on the issues operating in each individual case study, and similarities or differences between cases could be articulated as issues which could be the subject of further investigation.

Chapter Summary

In this chapter, the research problem has been described, its origin and significance explained, and methods presented by which solutions shall be obtained. It has been noted that the current investigation is qualitative in nature, seeking to explore, in depth, a complex and contextual problem from the perspective of individual participants. Identification of issues and testable hypotheses are expected outcomes of this investigation.

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CHAPTER TWO - REVEIW OF LITERATURE

Introduction

In this chapter, a review shall be presented of literature having relevance to the current study. Because inclusive classroom settings are the context for this study, the review begins with an examination of literature relating to inclusion; its evolution and pragmatic considerations. In the second section, literature relating to the study of teacher thinking is reviewed. In the concluding section, literature suggesting some connections between these two areas of research is examined.

Inclusive Education

Evolution

The concept of the inclusive school was introduced formally by the report of the National Association of State Boards of Education (NASBE, 1992) in which it was recommended that all students (with or without disabilities) be educated in regular classrooms as permanent members of that class. This concept, however, was the latest development in an educational trend which had been progressing for some time. Prior to the concept of the inclusive school, the Regular Education Initiative (REI) (Will, 1986a; Will, 1986b) had been the concept used within the North American education community to discuss the operation of such landmark legislation as PL 94-142. Several writers, taking different perspectives, have provided commentaries on the way these educational trends have developed over time (Clark, Dyson, & Millward, 1995; Dyson, 1997; Fuchs & Fuchs, 1994; Mittler, 1995; Taylor, Rizvi, Lingard, & Henry, 1997). One interpretation for the development of these trends towards inclusive approaches to education, referred to in the preceding chapter, has been that of Dyson (1997) in which he described a coming together of three main strands; critical, rights-oriented, and pragmatic. Of particular significant for the current investigation is the pragmatic strand. Characteristic of this strand are attempts to realize the goals of inclusion through attention to school and classroom practices, the development of a "child-centred" pedagogy. Pragmatic considerations in inclusive practice will be reviewed further in a subsequent section.

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It has been noted that the creation of more inclusive schools represents a change at both the classroom and organisational levels and that the relative enthusiasm for these changes may be related to the nature of the student's disability (Dyson, 1997; Fuchs & Fuchs, 1994). While advocates for those with severe disabilities are arguing for inclusive approaches this enthusiasm is not shared by all other groups. Advocates for students with learning difficulties, for example, have reported some concerns about the capacity of regular schools to meet the educational needs of these students (Cooper, 1993; Riddell, Brown, & Duffield, 1994). It may not be coincidental that it is this group of students who have had greater experience of education within a regular school context. Further, several writers have asserted that the current move towards inclusive schooling and a dismantling of special/regular education distinctions is both ill advised and ill informed (Fuchs & Fuchs, 1994; Gallagher, 1995; Kauffman & Hallahan, 1995).

In summarising its evolution, examining ways that inclusion has been defined help to explain its key features. Slee (1996), for example, describes the practice of inclusion, at least in Australia, as simply a re-articulation of special education and a concept which can only be understood in relation to concepts of exclusion. Reflecting a similar belief in the limited effect that inclusion has had on the culture of schools, Lewis (1993) notes that the separatism of special education has been reinforced by the creation of "integration students" (Lewis, 1993, p. 22). In contrast other authors, focussing on the structural elements of inclusive practice within the existing special/regular education dichotomy, refer to inclusion as problem solving (Rouse & Florian, 1996), a process (Ballard, 1995), and as, "a challenge to virtually every professional and institutional practice of twentieth century schooling" (Ware, 1995, p. 127). In common with all of these descriptions is the theme of change, restructuring, and challenge. Notably absent is any reference to placement of students.

Pragmatic Considerations In Inclusive Education

Dyson's (1997) conception of a pragmatic stand in the development of inclusion has already been identified as having particular relevance to the current investigation. While there has been a consistent association between discussion of inclusion and discussion of school reform more generally (Ainscow, 1991; Fuchs & Fuchs, 1994; Kauffman, 1989; Stainback & Stainback, 1992) there has also been a call for more

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specifically to be paid to specific practices which have contributed to the success or failure of inclusion.

Effective Schools And School Reform

While some have argued that one objective of the inclusive schools movement is the elimination of special education (Fuchs & Fuchs, 1994; Pearpoint & Forest, 1992) others have focused on the close association between two educational movements; inclusive education and effective schools. Fundamental to the effective schools movement is a recognition that not only those with disabilities but all students deserve the most effective education. In addition, the effective schools movement seeks to avoid additive approaches but instead to reconceptualize schooling for the benefit of all (Ainscow, 1991; Ainscow, 1995; Reynolds, 1995; Rouse & Florian, 1996). It has been noted, however, that there is less clarity in directions for current school reform than was suggested by early school effectiveness studies. Reynolds (1995) commenting on the effects of increasingly diverse populations, has suggested that schools will have an increased influence as higher proportions of students with special needs are represented. He has also cautioned that, given recent community pressure for academic outcomes, this increased influence makes students with special needs increasingly vulnerable.

Nevertheless, a number of approaches have been described which schools could take to become more effective learning organisations for all students. These include a conceptualisation of schools with a common mission as problem-solving organisations in which there is an emphasis on learning and in which the teacher is a reflective practitioner (Ainscow, 1991; Rouse & Florian, 1996). It is significant that many of the recommendations of Ainscow (1991) and others (Cooper, 1993; Reynolds, 1995; Rouse & Florian, 1996; Udvari-Solner & Thousand, 1995) have as their source research not specifically connected with special education. Instead, because a characteristic of most effective schools is their capacity to include all students in meaningful learning, these writers focus on the features of those schools and use those features to conceptualize the effective inclusive school. It is clear, however, that attempts to develop inclusive schools in isolation from more general reform may have significant implications for teacher stress, school morale, and teacher preparation (Baines et al., 1994).

Reform of middle schools, as noted in the preceding chapter, is an aspect of the evolution of schooling which is occurring at the same time as moves to make schools

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more inclusive. Because middle schools are the environment in which increasing numbers of students with special needs are being enrolled, the process of reform in those settings deserves consideration.

In a longitudinal study conducted by Felner and colleagues (Felner et al., 1997), the process of restructuring in a network of more than 97 middle schools in the U.S. was examined. The initiation for this restructuring was the 1989 Carnegie Council report "Turning Points: Preparing American Youth of the 21st Century" (Task Force on Education of Young Adolescents, 1989) and schools in the network being studied were using this report as the basis for restructuring. The Turning Points report had examined the apparent difficulties encountered by learners in their middle years of schooling and made recommendations for reform of middle schools. The Felner study provided an opportunity to examine the extent to which reform efforts had been taking place and the effects these reforms were having in the middle school (Felner et al., 1997).

A key finding was that reform had a positive effects on student performance in key academic learning areas, behaviour, and social/emotional dimensions. These effects were more evident in schools where reforms had either been more fully implemented or where the process had been in place for a longer time. Significantly, positive effects were even more pronounced for students who had been identified as being "at risk" of failure.

The authors drew several conclusions from these data. One conclusion was that there was a need for reform of middle schools which was both comprehensive and integrative. That is, reform which was either additive or piecemeal was not likely to be effective. It was clear that in schools where change had been, as they described it, "checklist based" and where there had been little serious attempt to consider all aspects of the school context, there was little measurable improvement in student outcomes (Felner et al., 1997, p. 547). Indeed, in some schools where change had been of a tokenistic nature, student performance had declined. In schools where reform was more "idea based", however, student outcomes were greatest. In summarising these findings, the authors noted Sarason's (1992) conclusions that schools are complex and integrated systems and that to avoid failure, reformers must attend to all aspects of these systems including organisational norms and the behaviour of individuals.

These observations have particular significance for the present investigation. As schools and school systems attempt to create more inclusive environments, approaches which do not acknowledge the complexity of schools appear doomed to failure. The thinking of teachers is one aspect of that complexity and a better understanding of the

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thinking of teachers may facilitate more comprehensive and integrative reform which, in turn, may result in improved outcomes for all students.

Effective Classroom Practices

A theme running parallel with the effective schools movement and the reform of schools as learning organisations has been an attention to specific practices which facilitate effective inclusion in the classroom (Ainscow, 1991; Ainscow, 1994; Barry, 1995; Hamre-Nietupski et al., 1989; Rouse & Florian, 1996; Salend, 1994; Stainback & Stainback, 1992; Udvari-Solner & Thousand, 1995; Ware, 1995). Effective practices are those which can be implemented in a regular classroom but which recognize differing levels of student ability, motivation, and learning strategies and which reflect the intention of the inclusive schools movement that all students be considered permanent members of a regular class. Co-operative learning, peer tutoring and other forms of student collaboration, for example, have been described as instructional techniques which have the capacity to address the learning needs of students who are excelling, achieving at average levels, and at risk of failure (Ainscow, 1994; Greenwood & Delquadri, 1995; Johnson & Johnson, 1986; Slavin, 1990; Villa & Thousand, 1992). In the major study reported below, for example, Baker & Zigmond reported the implementation of strategy instruction at several sites as well as peer tutoring (Baker & Zigmond, 1995).

Similarly, different forms of teacher collaboration such as collaborative consultation and team teaching are frequently mentioned as effective means of facilitating learning in inclusive contexts (Davis & Kemp, 1995; Dettmer, Dyck, & Thurston, 1999; Elksnin & Elksnin, 1989; Laycock, Gable, & Korinek, 1991; Voltz et al., 1994; West & Idol, 1990). Approaches which have evolved from cognitive psychology (Idol, Jones, & Mayer, 1991; Mulcahy, 1991; Palincsar, David, Winn, & Stevens, 1991) have also been gaining increased prominence as the potential benefits of developing self-regulating learners are realised.

In a study of effective inclusionary practices conducted by Vaughn and Schumm, perspectives of students and teachers were sampled across elementary and secondary schools using surveys, interviews, and observations (Vaughn & Schumm, 1996). This investigation, rather than simply seeking to identify effective practices, instead sought to identify the most efficient practices that were feasible, likely to be sustained over time, and which would positively influence the performance of all students. The authors noted

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that this focus on feasibility, sustainability, and effectiveness was a consequence of teachers beliefs about instruction in which there existed a focus on meeting the needs of the class as a whole rather than on implementing specific instructional practices that might meet the needs of target students. These distinctions between instruction which addressed the needs of the whole rather than the individual have been made by others (Baker & Zigmond, 1995; Rosenholtz, 1989) and appear to reflect a common feature of regular education. From the perspective of the student with special needs, Vaughn and Schumm observed that this acceptance of the student into the whole group had both negative and positive aspects; students are not singled out but few accommodations are made and hence academic progress is limited (Vaughn & Schumm, 1996).

Conclusions of Research in Inclusive Practice

Despite the considerable amount of literature which exists relating to potential benefits, limitations, and desirable directions of an inclusive approach, limited empirical studies exist which examine existing inclusive practice. Research into existing practice has provided information regarding outcomes for students with and without disabilities and information regarding the different ways that inclusion has been implemented in schools. What is clear from all of these studies is that only limited consensus has yet been reached regarding the implementation of inclusive practices.

Some studies investigating outcomes for students with disabilities have reported significant improvement in the performance of students with disabilities across a range of learning areas. Improved performance in academic, functional, and affective domains has been reported in studies of elementary aged students with severe disabilities (Hunt, Farron-Davis, Beckstead, Curtis, & Goetz, 1994a; Hunt, Staub, Alwell, & Goetz, 1994b) and those with learning difficulties (Banerji & Dailey, 1995; Wolak, York, & Corbin, 1992). Others, however, have reported more limited improvements (Baker & Zigmond, 1995; Zigmond et al., 1995). In the study of six elementary schools reported by Zigmond and colleagues (1995), these authors reported no significant academic change for approximately 50% of the students with disability involved in that study.

Responding to the relatively limited knowledge base regarding the current practice of inclusion, Zigmond and Baker conducted a study in which they set out to examine the meaning and practice of inclusion in elementary schools. The results of this study and

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responses to it were the subject of a special edition of "The Journal of Special Education" in 1995 (Zigmond, 1995a).

A particularly significant aspect of this study was that rather than focusing on the theoretical advantages or disadvantages of inclusion, it considered ways that inclusion was actually being implemented in different schools. The authors conducted two day visits to elementary schools in five states of the U.S.. In addition to systematic observation of lessons, semistructured interviews were conducted with students, parents, general and special education teachers, and school administrators.

From analysis of these data, the authors made several observations. One related to the degree of variation which existed between models of inclusion. In three of the five sites, change had been implemented as a result of collaboration with universities, agencies external to the school. In the other two sites change had been initiated internally, reflecting the ideas of school and district personnel.

Another observation related to participation. In three sites, teachers volunteered to have students with special needs in their classes. Consistent with this approach, students with disabilities were clustered into these selected classrooms. In two districts, however, inclusion was a school wide innovation involving all teachers and students with disabilities were distributed across the school.

Provision of special education services to students with special needs was predominantly achieved by the implementation of collaborative and coteaching models in the regular classroom. Special education teachers met with regular class teachers, often informally, and assisted in the delivery of general instruction in the regular classroom. In three sites, additional instruction was available outside the regular classroom structure, this tending to resemble more traditional pull-out instruction.

A focus of the Baker and Zigmond case studies was the degree to which instruction might be described as "special." That the role of the special educator was specifically examined in each case study while the role of the general educator was not, implied an expectation that any special aspects of instruction would come from the special educator. The role of the general educator in addressing the educational requirements of students with special needs appeared to be to provide a context in which special instruction might take place and to make general educators feel comfortable about the teaching of students with special needs was one aspect of the special educator's role (Baker & Zigmond, 1995). Commentators on these case studies, however, noted that

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there was actually very little evidence of instruction for students with special needs based on individual assessment or programming (Gerber, 1995; Martin, 1995).

While this lack of individualisation was cited as a criticism of the models of inclusion described in Baker & Zigmond's case studies, the role of the general educator in meeting the needs of these students was not extensively examined. Instead, the tendency for special educators to be seen as classroom assistants and the relative power imbalances implied by these structures was a significant aspect of the discussion. The current investigation sets out to address this lack of attention to regular educators by exploring their thinking in inclusive classrooms.

Another line of research has investigated the effects of inclusion on students without disabilities. The consensus of several studies has been that, in terms of academic performance, inclusion is neither detrimental nor beneficial to students without disabilities (Sharpe, York, & Knight, 1994; Staub & Peck, 1995; York, Vandercook, Macdonald, Hesie-Neff, & Caughey, 1992). Those same studies, however, have demonstrated that the social development of those students is facilitated by inclusive educational practices. These students reported higher degrees of acceptance of diversity and a greater sensitivity to the needs of others.

Descriptions of models of inclusive school practice emerging from the studies cited above have been characterised by their difference. Whereas in some schools, teachers identified as special education teachers worked in a co-teaching model with regular classroom teachers, in others special education teachers acted as resource personnel and in others very little support was available to the regular classroom teacher at all (Baker & Zigmond, 1995). Anomalies were found in several studies where a self-contained special education class also existed on the inclusive school site (Rouse & Florian, 1996). One recommendation common to almost all studies of inclusive schools, however, has been for additional professional development of all teachers. Responding to this recommendation, different models of professional development have been proposed which address the needs of teachers in inclusive schools. A feature of these models has been their focus on collaborative practice (Gersten, Darch, Davis, & George, 1991; Gersten, Morvant, & Brengelman, 1995; Glatthorn, 1990; Showers, 1990).

Teacher Thinking

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Studies of teachers and teaching effectiveness conducted prior to 1975 concentrated mainly on observable teacher actions and their effects. These investigations conventionally employed a process-product paradigm to examine relationships between observable classroom phenomenon; teacher and student behaviour, and student achievement (Dunkin & Biddle, 1974; Gage, 1963). Beginning with the work of Jackson (1966; 1968) and culminating in the "National Institute of Education Panel 6 Report" (1975), however, was a recognition that teaching is a complex process in which a dynamic relationship exists between teachers' thoughts and actions. Jackson's recommendation was that by looking at the hidden side of teaching, we may increase our understanding of the more visible aspects of the teaching process (Jackson, 1966). The Panel 6 report, though, went beyond acknowledging the importance of teacher thinking to outline an explicit view of teachers as clinical decision-makers, a metaphor which dominated teacher thinking research up to 1986 and which has persisted in various guises to the present day (Jones & Idol, 1990; Kleven, 1991; McGinnis et al., 1993; Pasch, Langer, Gardner, Starko, & Moody, 1995; Roe, 1991; Shavelson, 1983). The question as to whether a "decision-maker" metaphor has outlived its usefulness and whether a metaphor of teacher as "subjective theorist" (Ben-Peretz, Bromme, & Halkes, 1986) may be more productive is one which has been actively addressed since 1986, the year in which a major review of the literature in teacher thinking research was published (Clark & Peterson, 1986). The discussion has focused on two related aspects; the extent to which interrelated aspects of a complex process can be considered separately, and the variety of ways in which teacher thinking can be conceptualised. A synopsis of this discussion will help provide a context within which the current research question can be considered.

Construction and Deconstruction

The thought-action dichotomy has been identified as a heuristic device useful for analysis of research on the process of teaching (Clark & Peterson, 1986). Similarly, a distinction between planning and interactive thinking and teachers' theories and beliefs has been used to provide a framework for analysis of the research on teacher thinking. While these three categories are not dichotomous in the thought-action sense, they need to be considered in the light of the same discussion.

Clark, Crist, Marx & Peterson (1974), following the work of Jackson (Jackson, 1966) first conceptualised teacher thinking as having distinctive preactive, interactive, and

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postactive phases. Their hypothesis in this was that the thinking going on in each phase would be qualitatively different. Subsequently Clark and Peterson (Clark & Peterson, 1986), noting that distinctions between pre and postactive thinking appeared to be insignificant, subsumed these two phases into a planning category while retaining a category of interactive thinking: "The kind of thinking that teachers do during interactive teaching does appear to be qualitatively different from the kind of thinking they are doing when they are not interacting with students" (Clark & Peterson, 1986, p. 258). In addition, a new category, "theories and beliefs," was created to describe the store of knowledge which teachers have that affects their thinking in planning and interactive phases. While it appears that empirical bases exist for these categories (Marland & Osborne, 1990), other writers (Elbaz, 1990; Engeström, 1994) have suggested that because of the complex relationship between these categories, they would be better considered simultaneously within a more general teacher knowledge rubric.

It has already been noted that the history of research on the process of teaching prior to 1986 was characterised by attention to one or both aspects of the teacher action and/or teacher thinking dichotomy. Implicit in this distinction has been an understanding that thought and action can be considered separately. At one level, clearly, thought and action differ from each other; actions are observable while thought processes are not. On another level, however, the distinction is not so clear. Can thoughts be considered in the absence of observable action or action in the absence of thought? Or, as has been suggested, does close examination of one in the absence of the other render that examination meaningless (Clark & Peterson, 1986; Freeman, 1994; Parker, 1987)? This line of argument would appear to lead to research which considers both thought and action simultaneously within some broader context such as school or classroom. Taken to its logical conclusion this would lead to a view of thought and action as being inseparable and best represented by individuals in terms of a constructed reality (Elbaz, 1990).

Linguists such as Freeman (1991; 1994), included teachers' language under the heading of "observable action" and have written extensively about the interactive relationship between thought and action. While language is guided by thought, the structure of that language, in turn, influences the nature of the thoughts. The act of making tacit thoughts explicit shapes those thoughts (Freeman, 1991) and analysis of one in the absence of the other ignores the mediating influence each has on the other. The same issue forms a central theme in the work of Vygotsky (1978); that understanding mental processes requires understanding of the mediating tools and signs. "Mediating" in

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this context refers to a process in which the response to a stimulus activity modifies that stimulus. Symbolising teacher thought in language is seen as one justification for the claim that the articulation of inflight thoughts in a stimulated recall interview may be of value to the participant since, as Vygotsky (1978) asserts, higher mental processes are created when mediation becomes increasingly symbolic and internal.

Clark and Peterson (Clark & Peterson, 1986) have observed that while earlier process-product research assumed an essentially uni-directional relationship from thought to action a more accurate representation would acknowledge a reciprocal relationship. They contend that "the process of teaching will be fully understood when these two domains are brought together and examined in relation to one another" (Clark & Peterson, 1986, p. 258).

Acknowledging that aspects of a complex process are interrelated and that each should be examined with reference to the other does not, however, necessarily mean that they must be examined as one inseparable unit - - the real world of the teacher. An alternative perspective (Shulman, 1986) holds that there is no real world of teaching and learning but that there are many worlds, perhaps nested within each other which frequently and unpredictably intrude on each other. This research perspective, Shulman observes, is characteristic of one concerned with classroom ecology in which classroom context is nested within other contexts - - school, family, community - - and in which teaching and learning are viewed as a continuously interactive process with no factors being isolated as cause or effect (Shulman, 1986, p. 19). Even within this perspective, however, the researcher makes choices regarding the unit of study according to the particular research question being asked. To acknowledge the existence of broader contexts is not to imply that any investigation must include detailed examination of all these contexts.

To summarize, it appears both feasible and reasonable to focus research attention on inflight teacher thinking while at the same time acknowledging related aspects of teaching and the broader context in which that teaching takes place. In other words it appears possible to balance the risks of decontextualising one aspect of the teaching and learning process against risks of a research focus so diffuse as to have limited value for the guiding of practice (Clark & Peterson, 1986; Mitchell & Marland, 1989; Parker, 1987). Clearly, teaching takes place in a complex environment and the thoughts of the teacher are only one aspect of that complexity. While accepting these reservations the proposed research shall focus on examination of inflight thoughts with the expectation

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that such description shall be seen as part of a broader body of usable knowledge relating to teaching and learning. The design of the research includes a variety of methods of investigation and makes reference to the findings of related research but ultimately, researchers are obliged to present descriptions or results which seem to best illustrate the situation as they perceive it. Shulman (1986) argues that in attempting to understand a complex puzzle, researchers must attempt to capture the essential features of each element. It seems unlikely that any one theoretical frame will provide insight into all elements of the puzzle.

> *Any claim that the worlds of teaching, of schools and classrooms, of pedagogues and pupils, are so complex that no single perspective can capture them should be treated with scepticism . . . the observer who claims to possess precisely the kind of knowledge that he asserts is, in principle, unavailable to his fellows, makes a claim we must find suspect.* (Shulman, 1986, p. 7)

Conceptualising Teacher Thinking

Research interest in the exploration of interactive teacher thinking has evolved as recognition has increased of the complex nature of the classroom. More recent interest in the development and enactment of cognitive schema has evolved from conceptualisations of teacher thinking in terms of particular descriptive models. Reference has already been made to the significant impact of the decision-making model. Before examining the role of cognitive schema in teacher thinking, some further discussion of the decision-making model may be useful.

A conceptualisation of teacher interactive thinking or "inflight" thinking as decision-making has its source in the work of Shavelson (1973) and the NIE Panel 6 Report (National Institute of Education, 1975) to which earlier reference has been made. The rationale for this model was that any teaching act is the result of a decision that a teacher makes after engaging in certain complex cognitive information processing. Proponents of this model would hold that the basic teaching skill is, therefore, decision-making.

A key aspect of this model is the definition used for the term "decision." While Shavelson's (1973) original definition characterised a decision as being either a conscious or unconscious act made after complex cognitive processing of available information, subsequent researchers (Marland, 1977; Wodlinger, 1980) chose to restrict the focus to

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conscious decision. Additionally, in most cases, decisions were conscious choices between continuing to behave as before or behaving in a different way.

It has largely been this definition of decision which has led to concerns regarding the restrictive nature of the decision-making model (Mitchell & Marland, 1989; Yinger, 1986). If inflight thinking is conceptualised as decision-making, an implication is that this conceptualisation explains a significant proportion of that thought. It has been noted, however (Yinger & Villar, 1986), that decision-making of the conscious, rational type accounts for only about 25% of teacher thinking and that rational action models produce a "residual category of non-rational action" (Joas, 1994, p. 64). Examining teacher thinking with a pre-conceived model of that thinking as decision-making is problematic if it restricts the researcher's ability to be aware of alternative conceptualisations (Mitchell & Marland, 1989). Mitchell and Marland (1989), for example, have observed that teacher thinking may involve models other than decision making and have identified problem-avoidance, teacher-reaction, and opportunity-seeking models as alternatives. Mitchell and Marland argue further that attention to these alternative models, and indeed to individual schemata, may give a more complete picture of the process and that the teacher-as-decision-maker conception limits researchers' awareness of the real essence of teachers' thinking (Mitchell & Marland, 1989, p. 117).

Freeman (1994), in his examination of the nature of language data in teacher thinking research, observed that "the extended use of the decision maker construct in the first decade of teacher thinking research was not entirely benign" (Freeman, 1994, p. 81), and that persistent use of this construct has served to extend process-product, thought-action dichotomies. Believing it necessary to reunite these dichotomies, a general metaphor of teacher as subjective theorist has been used to integrate views of teachers thoughts and language (Freeman, 1994). Elbaz (1990) has characterised this as a commitment to the teacher's story in which the non-linear, complex, contextual and personal nature of a teacher's knowledge is recognised.

Despite the above observations, a persistent line of research (Borko et al., 1990; Kleven, 1991) asserts that the decision making construct, albeit with some modifications to enable movement beyond purely rational thought processes, is still a useful tool for conceptualising teacher thinking, particularly thinking which goes on in the classroom. While some researchers continue to view teacher thinking in terms of decision making, the position to be taken in the research being proposed here is that decision making is an overly restrictive conceptualisation of teacher thinking. Rather,

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decision making is seen as but one possible aspect of a process of teacher thinking which may also involve alternative conceptualisations.

Emerging from examination of a range of descriptive models and recognising the limitations of those conceptualisations has been interest in the role of cognitive schema in teachers' inflight thinking (Rumelhart, 1980; Rumelhart & Ortony, 1977). A complex relationship appears to exist between teachers' inflight thoughts, their actions, plans, theories, beliefs and propositional knowledge (Borko et al., 1990; Leinhardt & Greeno, 1986; Mitchell & Marland, 1989; Shavelson, 1983). One conceptualisation of this relationship has been to view teacher thinking as a "process of developing and enacting agendas based on teaching schemata" (Borko et al., 1990, p. 47). A teacher, while thinking in the classroom, engages in an interactive process involving the current teaching event and existing schemata. A schema has been described as "a data structure for representing the generic concepts stored in memory" (Rumelhart, 1980, p. 34) and analogous to an active theory or script. In common with theories, schemata have been used to conceptualize existing knowledge and beliefs and help explain the ways in which teachers interpret classroom phenomena. The concept of schemata brings together explanations about the making of conscious decisions as well as the non-rational and implicit thinking which is taking place during the teaching event. While the evidence for the existence of schema can only be inferred, it has been suggest that, as a set of organised activities (Leinhardt & Greeno, 1986) or cognitive tools (Marland & Osborne, 1990), their primary role is to organize existing knowledge into manageable "chunks" enabling the teacher to devote cognitive resources to the ongoing activities of the classroom (Borko et al., 1990; Leinhardt & Greeno, 1986; Marland & Osborne, 1990; Mitchell & Marland, 1989). A cognitive schema is seen as a structure which is enacted in terms of operational agendas or plans which include goals, objectives and routines for action (Borko et al., 1990). It has been suggested that by automating certain more routine cognitive processes a teacher's cognitive load is lessened. This view is supported by evidence from expert/novice studies in which expert teachers appeared to have a larger repertoire of routines or scripts and were thus better able to process the complexities of the classroom environment (Calderhead, 1981; Doyle, 1977; Mitchell & Marland, 1989).

The operation of cognitive schemas is relevant to the current investigation since it helps explain findings of research concerning relationships between teachers theories and inflight thinking. Several studies have noted that while theories-of-action can be clearly articulated by the teacher prior to the lesson and tend to be enacted in the classroom,

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reference to those theories during inflight thinking is noticeably absent (Marland & Osborne, 1990; McGinnis et al., 1993; Mitchell & Marland, 1989). A possible explanation for this may be that theories could be seen as being embedded along with propositional knowledge about subject matter, students, and teaching strategies, in complex schemata. Because these schemata are enacted as automated routines during the teaching event, they are less likely to be available for verbal report.

The relevance of cognitive schemas in analysis of teacher thinking has been recognised by several researchers investigating the teaching of students with disabilities. In a study of teacher planning described earlier, the authors (Schumm et al., 1995) observed differences between secondary and elementary teachers in terms of what they referred to as orientating premises. Whereas the elementary teachers tended to think of the class as a family and classroom as their world, secondary teachers tended to think of the class as practice for the real world, a world in which they could anticipate few adaptations for individual need. This concept of an orienting premise is functionally similar to that of a cognitive schema since it provides a structure by which complex sets of information are summarised and new information accommodated.

An example of this process of accommodation is described by Schirmer, Casbon, and Twiss (1997). In this paper, the authors analyzed a situation in which an experienced teacher was forced to examine her own methods of teaching. This teacher, a self-professed proponent of the whole language approach to teaching, realised that these methods were not appropriate for a particular student with learning difficulties. She subsequently changed her approach and the student's rate of learning increased. The authors discussed insights that this process revealed about the development of a teacher's schema. In monitoring her own thinking and experiences, the teacher was able to perceive a challenge to her existing schema and to subsequently accommodate new knowledge into a revised schema about effective literacy instruction. The authors observed that when students are making appropriate progress, existing schemas of learning and teaching are strengthened. Conversely, when teachers encounter students who do not learn effectively this may serve a valuable purpose in challenging existing schema, forcing a reconsideration of beliefs, and facilitating the development of schemas about teaching which include the learning of students with special needs.

There are clearly a variety of ways of conceptualizing teacher thinking. For a more complete examination of this complex issue, the reader is referred to the work of

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Elbaz (1990), Joas (1994), Marland and Osborne (1990), Shulman (1986) and Yinger (1986).

Instructional Context of Teacher Thinking Research

The importance of context in research of teacher thought has been referred to in earlier sections of this paper. In summary, the nature of thought is difficult to interpret without some understanding of the context within which that thought took place. Context, in this sense, includes the physical environment of the classroom and the activities taking place there as well as the sociological and cultural context. Without explicit attention to the context in which the thinking is taking place, the program of research lacks practical value for teachers seeking to apply findings to personal teaching contexts. Having accepted the need to understand context, a further issue is the choice of context in which inflight teacher thinking is to be examined. Shulman (1986) has been critical of research which focusses on teacher thinking in a limited range of teaching activities or on particular aspects of thought such as the frequency of real decisions (Shulman, 1986, p. 24). Implicit in these criticisms has been acknowledgement that decisions to investigate particular contexts of teacher thought may have limited the usefulness of those investigations.

Reflecting the influence of the process-product paradigm, the majority of studies of inflight teacher thinking have contextualised research according to teacher variables rather than to student variables. One dimension has been according to the educational or grade level taught. By far the majority of studies have taken place in elementary school settings and several researchers have noted a need for research which may describe thinking taking place in secondary school settings (Butefish, 1990; Clark & Peterson, 1986; Marland & Osborne, 1990; Roe, 1991).

Within the elementary school setting, researchers of teacher thinking have frequently chosen to focus attention on teachers of particular subjects, usually mathematics or science (Butefish, 1990; McGinnis et al., 1993). Although some researchers have suggested that relationships between teachers' understanding of subject matter content and the instruction which teachers provide for students constitutes a critical area for investigation, it appears that the studies of teacher thinking in these contexts does not specifically attempt to examine those relationships (Calderhead, 1981; Fogarty, Wang, & Creek, 1982; Mitchell & Marland, 1989; Shulman, 1986).

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Another common means of contextualising research on teacher thinking has been in terms of degree of teacher expertise; the expert-novice research referred to earlier (Calderhead, 1981; Fogarty et al., 1982; Mitchell & Marland, 1989). While research of this nature has provided significant insights into the nature of teacher thought, difficulties relating to the concepts of expert and novice have been expressed which make problematic the applicability of this research for the ordinary teacher (Elbaz, 1990, p. 28).

It is significant that there are few studies relating to teacher thinking in classrooms contextualised by the inclusion of students with disabilities even though it has been variously acknowledged that such students make up a significant proportion of the school aged population. It must be noted here that no assumptions are being made concerning the possible similarity or dissimilarity of inflight teacher thinking with respect to students with or without exceptionalities. A corresponding caution must also be made; that no assumptions are being made concerning possible distinctions between classes designated as inclusive and those which are not. Rather, an inclusive classroom is one context for teacher thinking research which is of topical interest (Fuchs & Fuchs, 1994) but about which little is known. One study which has contributed to an understanding of teacher thinking in inclusive classrooms is that of Schumm and colleagues (1995) which specifically investigated teacher planning in regular classes. A stimulus for this study was the recognition that: "To our knowledge . . . no case studies have chronicled teacher planning and adaptation for students with learning disabilities, elementary through high school" (Schumm et al., 1995, p. 337). These authors noted that planning takes place before, during, and after lessons and that examining written plans, therefore, was not an adequate way of fully examining teacher planning. Similarly addressing the transient nature of this planning and its implications for the teaching of students with disabilities, the current investigation also sought to explore the unobservable thoughts of teachers in inclusive settings.

In the study by Schumm and colleagues, the planning of twelve participants was explored; teachers of elementary through to high school grades (Schumm et al., 1995). Of particular significance to the current investigation of teacher thinking, the Schumm study considered planning conducted by the teachers as the lesson was being conducted. Using interviews, observations, surveys, and analysis of teacher reflections, the authors concluded that the teachers of elementary grades tended, in their planning, to consider the diverse needs of students to a greater extent than their high school colleagues. This consideration included the planning of individual assignments, provision of alternative

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materials, provision of alternative assessments, revision of plans for subsequent lessons based on student performance on tests and assignments. An implication of this study for the current investigation is that a difference exists between the thinking of elementary and secondary teachers with respect to students with special needs. Given that more research concerns the thinking of elementary teachers, a focus on the thinking of secondary teachers appears appropriate.

Another study conducted with respect to student variable investigated inflight teacher thinking of students having diverse ethnic backgrounds (McGinnis et al., 1993). Some of the findings of this study suggest parallels with teaching of students having differing educational needs. In examining the inflight thinking of two teachers of middle-school science, the authors noted that prior to the lessons reference was made to the students cultural/ethnic background although the teachers also expressed strong beliefs that all students should be considered as the same when making pedagogical decisions. Both teachers voiced a desire to be fair and to avoid notions of segregation (McGinnis et al., 1993, p. 50). When inflight thoughts were examined, however, it was observed that there was no multi-cultural component that addressed the diversity of students in the classroom nor did interactive decision making appear to be influenced by the students cultural/ethnic background. The significance of this study for the current investigation is the potential for contrasts between guiding principles espoused by teacher prior to a lesson and thoughts of those teachers during the lesson. An examination of relationships between these two aspects of teacher thinking shall be a feature of the current investigation.

Connecting Teacher Thinking and Inclusive Education

Reference has been made earlier in this chapter to the literature relating to effective and innovative teaching practices suitable for implementation in inclusive classrooms (Ainscow, 1991; Ainscow, 1994; Barry, 1995; Hamre-Nietupski et al., 1989; Mulcahy, 1991; Rouse & Florian, 1996; Salend, 1994; Stainback & Stainback, 1992; Udvari-Solner & Thousand, 1995; Ware, 1995). There also exists, however, an extensive body of literature describing the difficulties of implementing change in educational organisations (Berman & McLaughlin, 1978; Roberts-Gray, 1985; Ungerleider, 1993). In general, this literature suggests that rarely are innovations implemented in the manner originally intended. Rather, they tend to "mutate" during implementation, often giving

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disappointing results. (Berman & McLaughlin, 1978, p. 349). Most importantly, "the more central the changes are to the identity and way of life of group members, the less likely they are to occur" (Ungerleider, 1993, p. 98). If attempts to implement inclusive approaches to teaching are to succeed at least two conditions would appear to be necessary. First, the planners of those innovations need to have a thorough understanding of the context in which those innovations are to be implemented. This would include an understanding of the nature of the thinking of those who are to actually do the implementing. Second, those who are to be the implementers need to understand the nature of the innovation; the degree to which it can be modified and adapted while maintaining its basic integrity.

This appears to be a meeting point for research on teacher thinking and inclusive education. A significant body of knowledge regarding the meaning and practice of inclusion in elementary schools is beginning to accumulate. The same, however, can not be said for secondary schools. In addition, implementation of inclusion is taking place within the context of other efforts to reform that instructional environment. The current investigation will contribute to an understanding of inclusion in secondary environments and of the process of change in those environments.

For effective education to take place in inclusive classroom settings, attention needs to be directed towards effective teaching practices of regular classroom teachers. Teaching practices, however, are guided by teacher thoughts (Borko et al., 1990; Clark & Peterson, 1986). Shulman (1986) observes that changes in teaching "will become operational through the minds and motives of teachers" (p. 26). By gaining a better understanding of the nature of inflight thinking in inclusive settings there exists the potential to facilitate the development of more effective teaching practices in those settings (Borko et al., 1990; Gersten & Woodward, 1990; Potter, 1992; Shulman, 1986) and to improve collaboration between regular and special educators (Glatthorn, 1990; Potter, 1992).

> *Instructional settings represent a complex interaction of student characteristics, task characteristics, teacher characteristics and system constraints. Consideration of teacher thinking may only represent a part of this complexity, but the better any part of this interaction can be understood, the better the chances of using that understanding to more effectively adapt the instructional setting to meet the needs of all within it.* (Potter, 1992, p. 125)

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Chapter Summary

In this chapter, a review has been presented of literature from fields of inquiry which provide a context for the current investigation. It has been noted that while the concept of inclusion has different theoretical meanings, its implementation in school settings is also characterised by variety. A common observation of researchers in this field, however, has been to acknowledge the complexity of the classroom and the school. Further, the practice of inclusion has been described as a change in the way that the learning needs of all students are met. However, change requires an understanding, "not only of the culture of the classroom and school but also an understanding of what the participants value and understand . . ." (Palincsar, 1996, p. 136). The current investigation addresses this requirement by going beyond the observable activities of the classroom and exploring the guiding principles and inflight thoughts of teachers as participants in that context.

A feature of recent research into effective instruction for students with disabilities has been its focus on the activities of the special educator and on the practices that characterize effective instruction, particularly effective instruction in elementary school. The relative lack of research in the secondary context examining ways that inclusion is interpreted by regular classroom teachers is another weakness of current research which shall be addressed by the current investigation.

The Felner study (Felner et al., 1997) acknowledged the problematic aspects of current approaches to middle schooling and illustrated that schoolwide reform of the conditions of learning is possible and has positive outcomes for all students. The complexity of the change process, and need for a comprehensive and integrated approach were noted. The nature of the reform, however, was based on a report which did not explicitly address the needs of students with disabilities, nor did it examine the thoughts of individual teachers involved in the reform process.

The major study conducted by Baker and Zigmond (Baker & Zigmond, 1995), on the other hand, did provide detailed information and analysis of instructional practices at the individual class and teacher level. Further, these practices were explicitly aimed at facilitiating learning of students in inclusive classrooms. A focus of these case studies, though, was the degree to which inclusionary practices might be described as "special" and while there was a close examination of the role of the special educator, limited

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attention was given to the thoughts of the regular classroom teachers in this context. These case studies, in addition, were all of elementary school settings.

Other studies reviewed in this chapter have examined aspects of teachers' work in inclusive classrooms such as planning and development of schema (Schirmer et al., 1997; Schumm et al., 1995) and teacher thinking in a range of content-area contexts. There is, however, a scarcity of information about teacher thinking in secondary classrooms which have been designated by the relevant education authority as inclusive. The degree of inclusiveness of any classroom may be determined on a range of criteria and no assumptions can be made about degree to which teacher thinking in these classrooms may be different to thinking in a non-inclusive classroom, whatever that may be. However, the cognitive activities of regular teachers as they teach in inclusive classrooms may shed valuable light on current understandings of the development of inclusive schools and is an issue which has not been specifically addressed in any of the studies reviewed in this chapter. Attention to this issue, therefore, is the focus of the present investigation and in the chapter which follows, the methods used to conduct the investigation shall be presented and discussed.

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CHAPTER THREE - METHOD

Introduction

In this chapter, the methods used to investigate the research questions identified in chapter one will be presented. In addition, this chapter provides details of the participants, a rationale for the choice of methods, an explanation of the methods and procedures used, and details of the means by which ethical considerations were addressed. The overriding purpose of this chapter is to allow the reader to make informed judgements about the authenticity of the data, and the degree to which the findings may be considered to be a reliable and truthful representation of the inflight thinking of the participating teachers.

The chapter is divided into seven sections: a) Introduction, b) participants, in which the procedures and rationale for selection are presented, c) data collection, a description and explanation of the means by which data were collected, d) data analysis, description and explanation of the way that data were then analyzed, e) procedures, an audit trail in which the four stages of investigation are described, f) ethical considerations, and g) chapter summary.

Participants

Description of Participants

The participants in this study were five junior high school teachers, all of whom taught a number of classes across the junior high school grades. The data for this study, however, were obtained in the context of only one of those classes for each teacher. In each of those classes there was at least one student with a recognisable disability at the time the data were collected. Students with a recognisable disability were defined as students who, by reason of their disability, qualified for additional support services from the local education authority, but who were considered by the school and by their classmates to be permanent members of the class. Thus, all participants in this investigation taught at least one class designated as an inclusive classroom.

All participants in this investigation shared two features: Their classrooms were inclusive, and they taught junior high school grades. These five teachers, whom I will

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refer to by the pseodonyms which they chose as Laurie, Denise, Lysander, Max, and Christine, were, however, unique individuals in the way they approached the teaching process, and in terms of their teaching contexts.

Three of the participants, Laurie, Max, and Christine taught in a city in western Canada. This city, with a population of about 600,000 and located on the Canadian prairies, supports intensive agricultural and oil industries. The two schools in which these three participants taught, were a short drive from each other, in a part of the city characterised by medium density housing and close to the city's industrial section.

The schools in which these teachers worked are part of the Catholic schools system. The education authority for these schools, therefore, is the city's Catholic School Board. Laurie taught in a school referred to by the pseudonym of St. Joseph's Junior High School, a French immersion school. Despite this bilingual feature, all of Laurie's teaching was conducted in English. Christine and Max taught in the junior high school section referred to by the pseudonym of St. Philomena's Elementary/Junior High School. This school, having two sections on the one campus, drew on a similar demographic area to that of St. Joseph's, having a relatively heterogeneous population including students from diverse cultural backgrounds and students from disadvantaged social backgrounds.

Two of the participants, Lysander and Denise, taught in the same high school in a city in rural Australia. This city, located on a plateau approximately 200 km from the coast, has a population of about 22,000 and is known as a university town and a centre for grazing and other agricultural industries. The high school in which they taught, referred to by the pseudonym of Anzac High School, is a large institution enrolling students in grades seven to twelve. The school is part of the Government education system. Thus, the education authority for this school is the state Department of Education. The students have diverse cultural and socio-economic backgrounds. Some students live in the city and some travel to school each day from outlying rural properties.

As a group, the participants had a variety of teaching experiences (See Table 1). Teaching experience ranged between 27 years for Denise to three years for Christine. The subjects taught by the participants included language arts, religious education, social science, mathematics, and science.

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Table One. Details of participants.

Participant	Location	School	Initial training	Subjects taught	Years of teaching
Laurie	Canada	St Joseph's Junior High	Elementary	Social Science Religious Edn.	15
Denise	Australia	Anzac High	Secondary	Language Arts History	27
Lysander	Australia	Anzac High	Secondary	Social Science Cultural Stds.	25
Max	Canada	St Philomena's Elementary /Junior High	Secondary	Science Mathematics	8
Christine	Canada	St Philomena's Elementary /Junior High	Elementary	Language Arts History	3

Selection of Participants

The selection of participants followed a procedure consisting of several stages: a) Education authorities gave permission to contact schools, b) eligible schools were selected and contacted, c) meetings were held with principals, and d) teachers then volunteered from within those schools.

As a first stage in the process of identifying participants, two educating authorities were contacted; the local Catholic School Board in the Canadian city, and the state Department of Education in Australia. Permission was sought to conduct research in junior high schools administered by these organisations. These education authorities were selected principally because they offered an inclusive approach to education. In Canada, the Catholic School Board was selected because it had a clear public policy of inclusive education in all schools. Similarly, in Australia, the Department of Education had a public policy espousing principles of inclusive education. From these education

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authorities, permission was solicited to approach schools operating under their jurisdiction.

Once permission had been granted by the education authorities, contact was made with the principals of a sample of schools. In Canada, the principals of six Catholic junior high schools indicated an interest in participating, while two principals indicated an interest in Australia.

In subsequent meetings with the Principals of these schools, the purpose of the research and details of its procedures were discussed and questions answered. A letter describing the study was left with the Principal to circulate to staff.

The next stage of the selection procedure involved an explanation of the research to teachers and an invitation to participate. This explanation and invitation was made by the researcher in staff meetings at some schools. At other schools, Principals chose to undertake this activity themselves. At the conclusion of this stage, five teachers had volunteered to participate; three teachers from two different Catholic junior high schools in Canada and two teachers from the same state high school in Australia.

The researcher then met individually with these teachers, discussing details of the study and providing information notes describing the study and outlining ethical considerations. At a visit, approximately one week later, these teachers returned signed consent forms to the researcher indicating their willingness to participate and their understanding of the nature and conditions of that participation.

The procedure used to select participants for this study was chosen for specific reasons. First, it was important that participants be teaching in junior high school classes which could be defined as inclusive classroom settings. Second, teachers needed to be able to recall and report their inflight thoughts. Third, teachers had to be willing to participate in the study. In other words, participants in this study were teachers who a) had experienced the phenomenon under investigation (thinking while teaching in inclusive classrooms), b) were able to clearly articulate that experience (Van Manen, 1990), and c) were willing to do so. While the range of other characteristics of the teachers, such as subject taught and years of experience, has been described above, these characteristics were not a consideration in the sampling process.

In identifying teachers who taught in inclusive junior high school classes, two education authorities were selected for reasons described in the previous section. The specific definition of "inclusive classroom setting" used in this study was that used by each of the two education authorities. These definitions, though making reference to

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certain local criteria, satisfied the more general description cited earlier; a classroom in which all students were considered to be permanent members, regardless of ability or disability, and in which all students were present for all lessons in that subject. A clear identification of inclusive served to contextualize the classroom in which the research was being carried out and made that research more meaningful for teachers and for the research community. Without suggesting that the label may have influenced the thinking of the teacher, it seemed likely that when both researcher and participant were aware that a label had been applied by a third party, then there was at least a common linguistic starting point for the construction of meaning.

Participants were also selected on the basis of their ability and willingness to describe guiding principles, to recall and report inflight thinking. This ability was not determined by the researcher but was a result of a personal assessment by each participant. Thus, teachers, having had the research procedures described to them, made personal judgements about their ability to fulfil the requirements of the research and chose either to participate or not to participate on that basis.

It must be noted that the degree to which these participants were able to engage in these activities may be in contrast to that of other teachers. These teachers were selected because they were able to facilitate exploration of the nature of teacher thinking in inclusive junior high school classrooms. Inherent in the procedure used to select participants was, of course, a certain element of what could be termed "sampling bias." This was clearly recognised when the sampling procedure was devised. That is, selected schools were not necessarily a random sample of all schools possible, nor was it the case that participants were randomly selected from the population of teachers in general. These possible limitations, however, were regarded as restrictions to generalisation of the study outweighed by the heuristic value of the data which could be obtained from a purposeful selection of teachers having particular characteristics (Merriam, 1988 p. 427).

Teachers who volunteered to participate in this study may be characteristically and qualitatively different from those who chose not to participate; of course, those differences are indeterminable. Other teachers, for example, may not be as introspective as those who participated in the study. As shall be discussed in a subsequent section, participants' recall and report of inflight thinking appears to require specific cognitive activities and be related to their perceptions of the purpose of research. Other teachers may teach in more automated manners and be unable to articulate their guiding principles or recall their inflight thoughts even though guiding principles and inflight thoughts do

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exist. Finally, teachers who agreed to participate in the study might have been more relaxed or confident in their professional lives and hence more willing to expose and explore their thoughts.

Data collection

In this section, the techniques used to collect data in this study shall be described and examined and the choice of these particular techniques explained. The section concludes with a description and analysis of the process by which the three data collection techniques were combined. The objective of this, and the subsequent data analysis section, is to describe the processes of data collection and analysis in sufficient detail to "permit others to judge the quality of the resulting product" (Patton, 1990 p. 462). A feature common to all the data collection techniques is that their accuracy, dependability, and trustworthiness, were a function of the researcher's skills and perceptions (Patton, 1990). As the primary instrument of data collection and anlaysis (Merriam, 1988), consideration of all data in this study was by the mediation of the researcher. For this reason, the researcher's history, orientations, and perspectives were summarised early in the development of the study and are available for scrutiny in Appendix 1.

Researcher Fieldnotes

Fieldnotes are a common technique in qualitative research for recording descriptive and reflective data either as it occurs or soon after (Bogdan & Biklen, 1992; Patton, 1990). The researcher records observations of what happened in the research context and, in addition, records subjective impressions, thoughts, hunches, and ideas.

In this study, fieldnotes were kept by the researcher on all visits to schools and also used to record perceptions as the interview transcripts were being examined. Although written at the school in a notebook, they were then typed into the computer as separate, dated files, for each participant. In addition to written information, diagrams of the classrooms showing locations of students and the position of the teacher and researcher were sketched, and kept in a file with the printed fieldnotes.

The technique of keeping fieldnotes was chosen for several reasons. One reason was to provide a record of the context in which other data had been collected. This record of context included events and circumstances occurring before, during, and after the

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collection of semistructured and stimulated recall interview data. Capacity to capture data not able to be recorded on audiotape was a particular feature of fieldnotes; data such as the gestures and expressions of the participants, the appearance of the classrooms and the schools. The contextual data provided by fieldnotes then assisted the researcher in interpreting other forms of data.

Another reason for keeping fieldnotes was to record the researcher's impressions of the context in which the research was being conducted. These impressions, having an immediacy which was not available in other data sources, also assisted the researcher in the analysis of data, in that they served as a check on the degree to which researcher bias may have been interfering with an authentic representation of the participants' thoughts. Further, as interpretations of participants' thoughts began to emerge, these were recorded in the fieldnotes.

Finally, the fieldnotes formed an ongoing record of the study and the actions of the researcher. By this means, the large volume of data which was collected could be tracked, omissions rectified, and appointments kept. An audit trail, described in more detail in the procedures section which follows, was developed from the researcher's fieldnotes.

Semistructured Interviews

Semistructured interviews are a common and relatively uncontroversial method of data collection in the qualitative arena (Bogdan & Biklen, 1992; Patton, 1990; Spradley, 1979). This form of interview, lying somewhere on a continuum between structured and unstructured interviews, is generally focussed on a particular topic and guided by some general questions (Merton & Kendall, 1946). Patton (1990) refers to this type of interview as the interview guide approach. Questions asked by the researcher in this study, while seeking to explore particular issues, were not always asked in exactly the same manner but were used as guides to the interview.

In this study, two semistructured interviews were conducted with each participant. Questions used during the first of the semistructured interviews were designed to put the experience (of teaching in inclusive classrooms in secondary schools) in context. The participants were asked to tell about themselves as teachers up to the present time. In the second interview, questions were asked relating to their current

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experiences, the meaning they placed on those experiences, and to the principles which guided their practice (Seidman, 1991).

The guiding questions used in the two semistructured interviews were as follows.

Interview One	Question One:	How did you come to be teaching this class?
	Prompts:	How did you come to be teaching junior high school? How did you come to be teaching this subject?
Interview Two	Question One:	What is it like to teach in this class?
	Prompt:	What do you do in a typical lesson with this class?
	Question Two:	Given what you've told me about teaching in this class, how do you understand inclusive education?
	Prompt:	What do you say if someone asks you to tell them the meaning of inclusive education?
	Question Three:	What principles, if any, guide your teaching in this class?

These two interviews, each lasting between 40 and 60 minutes, were tape recorded and transcribed by either the researcher or an assistant skilled in transcription and understanding the requirement for confidentiality.

Semistructured interviews were chosen as the data collection method for obtaining information about the participants' professional life, their understandings of learning and teaching in an inclusive classroom, and about the principles which guided their teaching (Schutz, 1967; Spradley, 1979). Conducting two shorter interviews had the dual advantage of being easier to schedule and allowing a systematic progression from details of experience to personal meaning of that experience (Seidman, 1991). Seidman states that "People's behaviour becomes meaningful and understandable when placed in the context of their lives and the lives of those around them" (Seidman, 1991, p. 10).

In addition to providing information about the teachers' understandings and about the context of the classroom, the interviews provided a further opportunity for the

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researcher to develop a sufficiently comfortable relationship to allow the participants to express a full range of thoughts during the stimulated recall interview. Good rapport between participant and researcher is critical for the stimulated recall interview technique. The extent to which participants will report a full range of thought is considered to be largely a function of the rapport which exists in the interview situation (Bloom, 1953). It is likely that the semistructured interviews and the rapport developed during these interviews had a significant impact on the comprehensiveness of the thinking reported during the subsequent stimulated recall interviews. For this reason, the semistructured interview technique was particularly valuable since, in contrast with more formal interviewing techniques, the researcher was able to adapt the wording and pace of the interview to suit each individual participant.

A criticism of interviews in which the researcher asks predetermined questions is that, by providing a structure for the interview, the researcher loses the opportunity to understand how the participant might structure the topic being discussed. While this is a reasonable criticism, the semistructured interview technique was chosen in this case because it enabled the researcher to collect data which could be compared across participants in a cross-case analysis, in addition to providing a focus on the question being investigated. As well, because researcher questions were guides to the interview and were asked in different ways, the form of the interview was sensitive to the way the participants structured their responses.

Stimulated Recall Interviews

Researchers investigating thinking seek access to processes which are not readily observable. Asking participants to verbalize their thoughts, or think aloud while engaged in some activity, is a method commonly used for gaining access to those covert mental activities (Shavelson, 1983). Transcribed verbal protocols then become data for later analysis. Under some circumstances, however, it becomes impractical for participants to verbalize thinking and engage in an activity at the same time. Verbalising thinking while engaged in teaching activities in a classroom would be an example of such a circumstance. In this situation, participants would be asked to make retrospective reports of their thinking, usually based on the provision of extensive retrieval cues such as audio or videotape of the preceding activity - - a "stimulated recall" interview (Shavelson et al., 1986). Bloom (1953; 1954), a pioneer in the use of this method, used audiotape

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recordings of lectures to stimulate recall of student thinking which had taken place during those lectures. Subsequent research, using this technique, used similar methods; that is, videotape recordings, for example (Kagan & Krathwohl, 1967).

The idea common to all stimulated recall methods is that a participant "may be enabled to relive an original situation with vividness and accuracy if s/he is presented with a large number of cues or stimuli which occurred during the original situation" (Bloom, 1953 p. 161).

In the present investigation, stimulated recall interviews were used to derive precisly this type of information. To obtain stimulus material for the stimulated recall interviews, two lessons with each participant were first videotaped. The camera was arranged at the front of the classroom such that the camera angle was as much like the teacher's perspective as possible. Often the teacher did not appear in the field of view. A pilot study with a female teacher of grade nine had suggested, however, that this did not impede the teacher's ability to recall in detail her own actions since the cues which were available at the time - - expressions, gestures and words of the students - - were captured by the camera. In addition, the potentially intrusive effect of having a camera recording the classroom activities was reduced by mounting the camera to a tripod and, once recording began, positioning the researcher some distance from the camera or even absent from the room.

Within five minutes of the lesson's conclusion, the teacher was asked to watch the videotape of the lesson and think-aloud regarding thoughts which occurred during that lesson. Potential distortions of data which could occur through focussing on specific classroom events or hypothesised strategies (Mitchell & Marland, 1989; Shavelson et al., 1986; Yinger, 1986) were avoided by using, where necessary, neutral prompts which would facilitate the production of recollections. Prompts were in two forms. One form was that in which participants were encouraged to continually verbalize thoughts. These prompts were made if the participant was silent for more than 20 seconds and included questions such as: "what was going on in your head?" and "what were you thinking?" Less common as a second form of prompts in which participants' verbalizations were reframed to encourage clarification or elaboration. An example of this latter type of prompt occurred as a participant said, "I'm really into the topic," and I asked, "So you're thinking about the topic itself?"

Further, the status of the reports was checked by asking the participants to indicate whether their report was of inflight thinking or commentary on that thinking (P.

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Marland, personal communication, January 23, 1996). Participants were free to stop the tape at any time to make more detailed comments.

All comments made by the teacher and the researcher during these interviews were recorded on audiotape. Sound from the videotape was clearly audible on the audiotape. This enabled the classroom event, about which the teacher was reflecting, to be identified. This audiotape was then transcribed and the protocol used as a source of data for analysis.

The stimulated recall interview technique is a powerful and well-documented means of gaining access to an individual's cognitive processes. However, stimulated recall techniques are not without criticism. Those criticisms relate mainly to two issues: a) To what extent can retrospective reports of thinking be considered legitimate, truthful or authentic sources of data? and b) to what extent does the provision of extensive cues affect the authenticity of the participant's reports?

There has been considerable discussion over many years regarding the legitimacy of verbal report data. Much of the discussion has been related to the authenticity of introspection as distinct from observable objective data. Data relating to overt behaviour, for example, can be readily captured (using recordings or systematic observations) for later analysis; it can be inspected by others (a way to establish reliability); it can readily be reduced to quantifiable units of data (e.g., frequency or duration of occurrences). When using verbal reports as data, however, the researcher is usually interested in the unobservable thoughts of the participant. Instead of having direct access to the dependent variable, as would be the case where that variable was an observable behaviour, researchers investigating thinking have access to the dependent variable only indirectly through the agency of the participants themselves.

Moreover, the participant's memory is a critical variable because in the stimulated recall technique the participant is being asked to recall thinking which occurred some time prior to the interview. Ericsson and Kintsch (1995) examine the operation of what they refer to as long-term working memory (LT-WM) in the context of an information-processing theory. They observe that retrieval of information from long term memory (LTM) is facilitated by an individual's familiarity with the target activity and by the provision of retrieval cues which are as similar as possible to the target item. Under these conditions, individuals make use of retrieval cues in LT-WM to rapidly and reliably access information stored in LTM, information which may not have otherwise been available. This information is then available for verbal report (Ericsson & Kintsch, 1995;

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Ericsson & Simon, 1980). LT-WM, however, is mediated by "retrieval schema" in which information is both stored and retrieved. It was assumed, in the current investigation, that the same retrieval schema used to store information would facilitate recall, since the participant was being asked to recall thoughts without being required to process that information in any way.

In this information processing framework, then, verbal reports may be affected by several factors which have the potential to distort the report itself (Shavelson et al., 1986). One of these is the demand placed on the participant by researcher probes. In addition to simply requiring reports of information normally available, a researcher may require a participant to edit information in a particular way such as, for example, by asking the participant to justify thoughts or to report only thoughts of a certain nature: "Were you thinking of any alternatives?" Placing increased cognitive demand on participants by using probes of this nature increases the risk of distorted verbal reports. Indeed, in this investigation, this factor was no doubt operating. However, its potential distorting effect was addressed using methods suggested by Shavelson, et al. (1986) and by Mitchell & Marland (1989). That is, teacher thinking was probed using unstructured requests such as, "tell me what you're thinking." The use of these probes, then, invited the teacher to report information normally available, and participants were free to select aspects of the videotape on which they wished to comment (Keith, 1988; Yinger, 1986).

Another factor likely to affect demand on the participants was the degree of rapport which existed between the researcher and participant. It is more likely that complete and accurate reports will be produced if the teacher does not engage in judgement regarding which thoughts to include in the report and which to exclude. Bloom (1953), commenting on the personal dynamics of the stimulated recall interview, noted that, "The extent to which a student will report the most private of his thoughts is largely a function of the rapport which is established in the interview situation" (p. 162). This factor was addressed in the present investigation by establishing solid participant-researcher rapport. In other words, the existence of good rapport between researcher and participants helped to reduce the demand on the participant by reducing the need to edit the thoughts being reported.

Breadth of the information being reported is another factor with the potential to affect the quality of verbal report data (Shavelson et al., 1986). Verbal reports, it has been suggested, may be less accurate if participants are required to report on thoughts which occurred during an event which is not clearly defined. During the stimulated recall

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interviews in this study, however, the events, about which cognition was being reported, were very specific and clearly defined. Because the individual was watching, on the videotape, a specific event as it unfolded, potential difficulties caused by having to report thinking related to a more general event were avoided.

Finally, time elapsed between an event and recollection of thought during that event is another potentially distorting factor. Retrospective reports cannot normally claim the same high levels of completeness or distortion-free structure as might reports produced concurrently with the performance of a task. In the present investigation, this potential difficulty was also addressed in two ways. First, the interviews were conducted as soon as possible after the lesson, to facilitate access to information still in recent long term memory (Ericsson & Kintsch, 1995). Second, visual cues were available to the participant because the lesson had been videotaped. The videotape, it was assumed, assisted the teacher to relive the teaching event.

The nature of cues and the manner in which they are used to recall cognitive processes in stimulated recall techniques is a contentious issue. Most discussion concerning the legitimacy of stimulated recall reports relates to the nature and effect of the cues provided.

While, on the one hand, the use of cues assists participants to recall their thoughts, on the other, several criticisms of stimulated recall techniques relate specifically to the use of these cues. In one criticism, for example, Yinger (1986) rejects the important assumption that the new cues provided by the videotape are isomorphic to the original cues and that they therefore allow the individual to retrieve thoughts relating to the original event. Instead, Yinger claims that the cues, as they are presented by videotape, are different to those present during the actual event and that experiencing these new cues is a different experience from that being portrayed on the videotape. In other words, watching and listening to the lesson unfold on videotape, is different to being in the classroom during that lesson. The thoughts which are reported while watching and listening to the videotape, therefore, are not the same as those which may have occurred during the lesson. During the lesson the teacher is an actor in the lesson. While watching the videotape, however, the teacher becomes an observer and, as an observer, is likely to notice cues on the videotape such as student expressions, actions, and background noise, which may not have been recalled from the lesson (Keith, 1988; Yinger, 1986). In particular, the experience of seeing oneself teaching is a cue which is certainly not available during a normal lesson. Several authors have emphasised that the

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experience of viewing oneself teaching is likely to have a powerful impact on the authenticity of the verbal reports of thinking (Keith, 1988; Yinger, 1986). Thus, it was acknowledged that the experience of viewing a videotape of a lesson is not the same experience as actually teaching that lesson.

In the present investigation, extensive cues were provided in order to assist participants in recalling thoughts associated with classroom events. At the same time, it was clearly acknowledged that the potential threats to the authenticity of the data discussed above may have been operating. By viewing the videotape, though, the participants were assisted in mentally reconstructing their experience of that teaching event. From this internal reconstruction of experience, participants could reconstruct the thinking that was taking place during the event and such thinking would be available for verbal report (Bloom, 1953; Shavelson et al., 1986). The position taken in this study was that to produce the richest, most detailed reconstruction of the thinking that took place during an event, the richest, most detailed reconstruction of the teaching event should be cued. Further, the use of videotape for stimulated recall interviews would appear to be a significant improvement on Bloom's (1953) use of audiotape.

The task of the researcher was to recreate, as much as possible, the stimuli available to the teacher during the teaching event. As mentioned, the videocamera was positioned close to the teacher's usual position in the room and facing the students so that, as much as possible, the participant's perspective would be captured. This meant that during the stimulated recall interview, participants sometimes needed to rely on memory of events unsupported by visual evidence of their own actions because they were not always visible on the videotape. While this may have been a methodological concern, analysis of data produced from a stimulated recall interview in the pilot study suggested that the teacher had no difficulty recalling activities. Further, the teacher appeared able to give detailed reports of inflight thinking, even at times when she did not appear on the videotape. Thus, some of the problems identified by Yinger (1986) were overcome: a) Removing the teacher from the image created a set of more realistic cues because the experience of seeing oneself on camera was clearly unlike the experience of seeing naturally occurring classroom activities, and b) information which was incomplete invited the teacher to fill in the gaps (Shavelson et al., 1986). In short, it was assumed that filling in gaps in the absence of the potentially distracting experience of seeing oneself on videotape forced the participants to rely on memory of the event and hence produced a

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more detailed recollection than was produced when they were visible on the videotape (Bloom, 1953; Yinger, 1986).

Combination of Techniques

In the investigation reported here, a combination of three data collection techniques were used: a) Researcher fieldnotes, b) semistructured interviews, and c) stimulated recall interviews. In the subsequent analysis phase of the study, data obtained from these three techniques were also combined. The process of combination and rationale for that process during the data collection phase shall be discussed in the section which follows. Discussion of data combination during the analysis phase shall be presented in a subsequent section.

As previously described, fieldnote data were kept throughout the course of the study, beginning with the development of the research question and continuing through the process of analysis. Semistructured interviews were conducted with each participant after an initial period of familiarisation which was recorded in fieldnotes. Stimulated recall interviews were conducted a short time after the semistructured interviews. While the nature of the data collected during these latter interviews differed from that collected in semistructured interviews, increased familiarity with the teacher's context, gained through semistructured interviews, helped sensitise the researcher to the participant's perspective. This sensitisation allowed the researcher, when analysing the data from all sources, to more faithfully reflect each participant's point of view.

Three different data collection techniques, resulting in three discrete but interrelated sets of data, were used to increase the validity of this study and to provide added depth to the investigation of teacher thinking (Figure 1a). This form of triangulation, referred to by Denzin (1978) as "data triangulation," is a means by which weaknesses of one data collection technique may be compensated by another technique (Bogdan & Biklen, 1992; Denzin, 1978; Patton, 1990). It is the case that every technique used for collecting data has certain weaknesses and that these weaknesses, inherent to the technique, may result in a potential limitation to the validity of an investigation. To help strengthen the validity of this study, therefore, data were collected using three techniques and for each weakness exposed by one technique, compensation was provided by the remaining two. Potential limitations to the validity of the study are described in the section which follows in terms of weaknesses of individual techniques for the collection

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of data. These potential limitations are, therefore, addressed by the combination of data collection techniques.

Inherent in the use of researcher fieldnotes were two weaknesses. The first related to the voice of the participant or the degree to which the perceptions of the participants could be discerned, as distinct from those of the researcher. The second related to the accuracy of the data - - the degree to which it faithfully presented information collected in the field. Semistructured and stimulated recall interviews provided compensation for weaknesses of this data collection technique (Figure 1b).

Figures 1a and 1b   Triangulation of data.

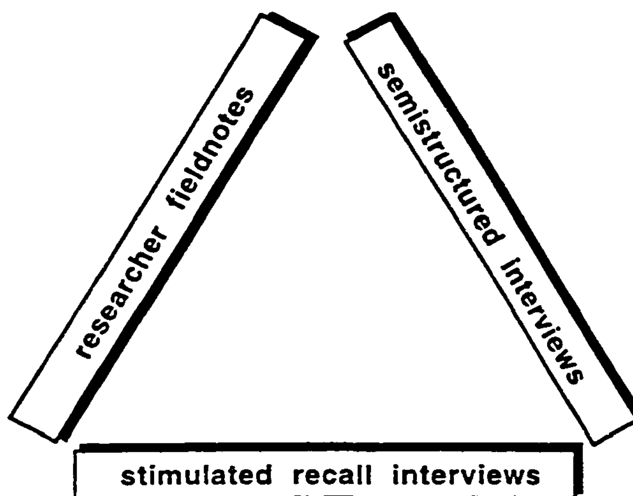

Figure 1a. Triangulation of data collection techniques.

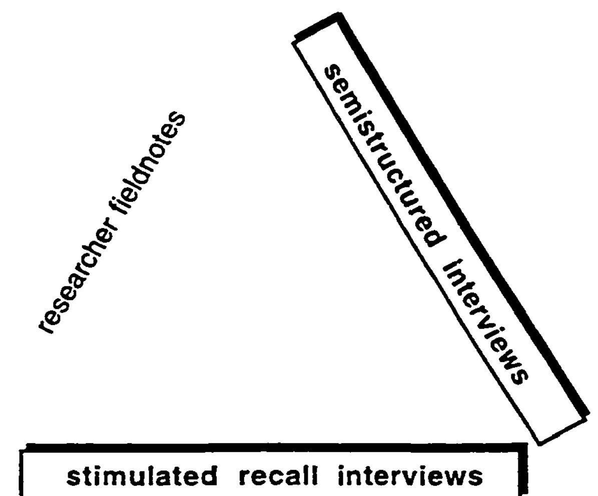

Figure 1b. Potential limitations of researcher fieldnotes compensated for by other data collection techniques.

One weakness of the fieldnote technique was that fieldnotes could not be expected

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to reflect the participants' voices, their opinions and perceptions. Instead, all data was filtered by the perceptions of the researcher and there were no opportunities for participants to structure information in ways most suitable for them. This potential weakness of researcher fieldnotes was compensated for by the use of stimulated recall interviews and, to a lesser extent, semistructured interviews. In these two data collection techniques, the reader would expect to hear the voices of the participants as they presented their opinions and structured their responses according to their own perceptions. This was particularly the case in stimulated recall interviews, where the researcher's only input was in the form of general prompts.

Accuracy of researcher fieldnotes was dependant on the researcher's recollection and interpretation of observed events. Although fieldnotes were written immediately after interviews or soon after the researcher had left the schools, accuracy was a function of the researcher's ability to observe and remember. Data derived from semistructured and stimulated recall interviews helped to compensate for this potential weakness. These forms of data had been recorded on audiotape, transcribed, and these transcripts checked for accuracy by the participants. For this reason, the reader can have confidence in their authenticity and in their capacity to fill in gaps which might exist in researcher fieldnotes.

In addition, semistructured interviews, while being a relatively robust data collection technique, had two weaknesses in the context of this study as well: a) They provided limited opportunities for participants to structure knowledge, and b) they were constrained by time. Stimulated recall interviews and researcher fieldnotes provided compensation for weaknesses of this data collection technique (Figure 1c).

One weakness of semistructured interviews was that, because the interview was guided by researcher-determined questions, there were limited opportunities for participants to structure their responses and present their understandings in their own way. This potential weakness was compensated for by stimulated recall interviews in which participants were able to recall inflight thoughts without having to respond to structured researcher questions or probes. In addition, researcher fieldnotes captured additional comments of participants in which they referred to issues outside the structure of the formal interview.

Data collected during semistructured interviews were limited by the time available for those interviews. This may be seen as a weakness of the data collection technique since, had these interviews continued, participants may have been able to articulate deeper or more significant understandings or thoughts. Researcher fieldnotes provided a

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compensation for this by capturing comments made by participants before and after the interviews.

The stimulated recall interview technique as it was used in this study, had three weaknesses: a) Authenticity depended on a degree of trust and rapport between researcher and participant which could not be developed from the interview alone, b) participants were not able to process or give consideration to their recollection of inflight thought, and, c) participants were only asked to recall their thinking from two lessons. Semistructured interviews and researcher fieldnotes, however, provided compensation for these weaknesses of the data collection technique (Figure 1d).

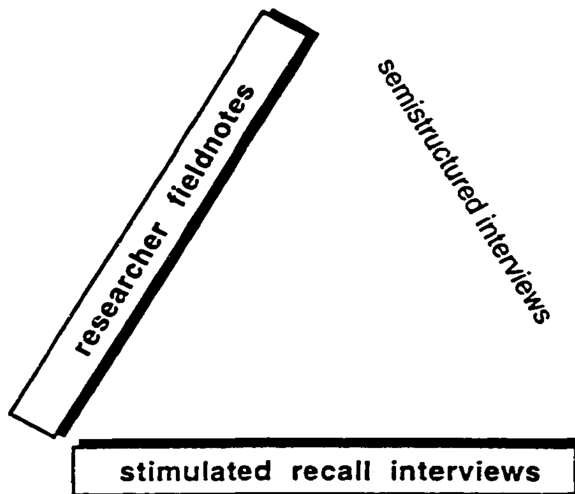

Figure 1c. Potential limitations of semistructured interviews compensated for by other data collection techniques

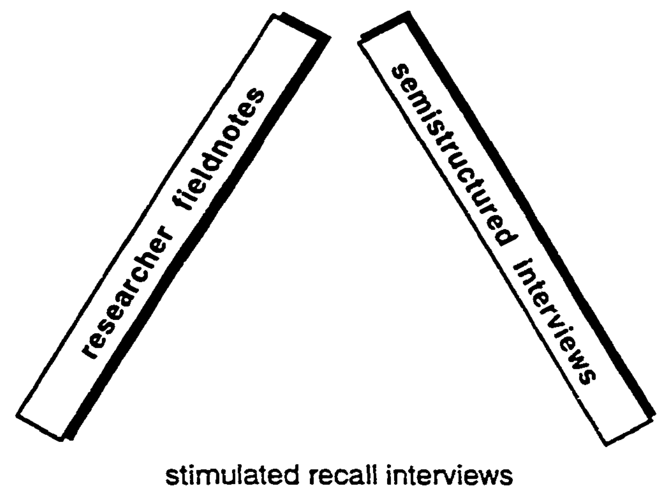

Figure 1d. Potential limitations of stimulated recall interviews compensated for by other data collection techniques

A threat to the validity of the data collected in stimulated recall interviews was the degree to which the participants reported a full range of thoughts, understandings, and opinions. As argued previously, rapport between researcher and participant, and the subsequent development of trust, was seen as being critical in this regard. Researcher

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fieldnote data, however, facilitated the development of rapport by enabling the researcher to record features of the participant's context, consider these features, and include reference to them in subsequent interviews. Evidence of the researcher's familiarity with the participant's context assisted in the development of rapport and in the development of trust.

In stimulated recall interviews, participants were not given time to consider their thoughts in careful detail. This was an intentional feature of these interviews since, in this situation, participants were required to recall thoughts, not to filter those recollections. Nevertheless, it is possible that, had time been available, participants might have identified alternative ways of interpreting their thoughts. This potential limitation of the stimulated recall technique was compensated for by the use of semistructured interviews and researcher fieldnotes. In these latter data collection techniques, participants had more time available and were able to consider their responses more carefully. These responses were then recorded and used to assist in the interpretation of stimulated recall data.

A final weakness of the stimulated recall interview technique, as it was used in this study, related to the focus on events in only two lessons. It must be acknowledged that these two lessons, and the teachers' thoughts which occurred during those lessons, represent only a sample of the inflight thinking of those teachers. A more general overview of the guiding principles, however, derived from semistructured interviews provided some insights into the teacher's thoughts more generally. These guiding principles were then used during the analysis of stimulated recall data to help identify inconsistencies and commonalities. Passing comments and interactions between participants, other staff members, and the researcher were also recorded in researcher fieldnotes and these served as another, more general, perspective on the teacher's views of education.

In summary, a choice was made to collect data in the present investigation using three different techniques. There were two main reasons for this choice, the first relating to features of the techniques themselves, the second to the nature of the data which would be derived from those techniques. Because consideration of the data mainly occurred during the process of analysis, this reason for choosing three different data collection techniques shall be discussed in that context.

Features of the techniques themselves, however, have been discussed in this data collection section. The role of the researcher as primary research instrument has been

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acknowledged as have the strengths and weaknesses of the individual data collection techniques, that is, researcher fieldnotes, semistructured and stimulated recall interview techniques. The choice to use multiple data collection techniques has been justified in terms of truthfulness and authenticity. Because the data, on which the findings of this study are based, were collected using more than one technique, the reader may be more confident that those results are an authentic and truthful rendering of the thinking of the five participants (Merriam, 1988).

Data Analysis

Data derived from the three different data collection techniques were combined in the analysis phase of this study. In this section, the data analysis techniques shall be described and discussed.

Process of Analysis

The data collected in this investigation were analysed in two ways: first, analyses of single cases from which individual case studies were derived for each participant; and second, as cross-case analyses.

In single case analyses, the different forms of data were used to facilitate exploration of individual participants' inflight thinking. This exploration was undertaken in a sequential manner, moving from an exploration of context, to an exploration of guiding principles, to an exploration of the nature of inflight thinking. Finally, relationships between guiding principles and inflight thinking were explored.

In cross-case analysis, different forms of data were again used but in summary form. The focus of this stage of analysis was on the inflight thinking of the participants, considered collectively.

Single Case Analysis

In single case analysis, data for each participant were considered as an intact and unique set or case study. The researcher explored the data relating to each participant without making reference to the data relating to other participants in the study. It was acknowledged, however, that it was impossible to avoid recalling case studies preceding

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those currently being analysed. This potential limitation to the validity of individual case studies was addressed by completing the process of analysis for each participant before commencing that same process for the next participant. While collection, transcription, and checking of audiotapes and fieldnotes relating to several participants sometimes overlapped, at least one month passed between the conclusion of analysis for one case study and commencement of analysis for the next. Further, triangulated data collection and analysis techniques decreased the likelihood of contamination between cases.

Context. Data relating to the context of each participant were derived from fieldnotes and semistructured interviews. Fieldnote data relating to the participant's context was summarised in the Teaching Context section of each case study. Semistructured interview data relating to the teachers' experiences were identified from the transcripts and edited such that experiences were reported in the first person but in a generally chronological sequence.

Guiding principles. Semistructured interview data were used to identify participants' guiding principles. At times, the researcher returned to the original audiotaped interview to gain further insights into partipants' responses. Listening to the voices of the participants; hearing intonation, laughter, and concern, assisted in the interpretation of meaning. The first step in the process of analysis was to identify researcher questions specifically relating to guiding principles. Participants' responses to these questions were summarised and retained.

The researcher then examined remaining sections of the transcripts in which the participants presented their perspectives on educational issues. This examination was done with reference to the guiding principles identified in the first step. In this second step, comments which could not readily be included within existing principles were then grouped under tentative headings. Reference was made to fieldnote data and to contextual information to help confirm or deny these tentative headings.

In the third step, summary statements for each guiding principle were forwarded to participants for confirmation. Having been confirmed or modified, a more detailed description of each guiding principle was finally developed.

Finally, a draft of this section of the analysis was sent to each participant for comment and validation.

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Inflight thoughts. Transcripts of stimulated recall interviews were used as data from which to explore the nature of the participants' inflight thinking. The first step in this analysis was to identify recollections of inflight thoughts in the transcripts and to separate these from non-inflight thoughts. Inflight thoughts were defined as thoughts which the participant had been thinking during the lesson, whereas non-inflight thoughts were those which had occurred after the lesson, or during the interview itself. Typically, non-inflight thoughts were explanations of inflight thoughts, or thoughts which occurred as the participants watched the videotape. Distinctions between these thoughts in the transcripts were made according to the guidelines developed by Marland (Marland, 1977). (See Appendix 2.)

Individual "thought units" were then coded, and these coded units of data grouped under preliminary headings as they emerged (Bogdan & Biklen, 1992; Colaizzi, 1978). Headings were, as much as possible, drawn directly from the transcripts to ensure an accurate representation of those thoughts. Hence, rather than referring to one characteristic of a participant's thoughts in generic terms such as "thinking about students," the participant's own words, "you guys!" were used. Where the meaning of thought units was unclear, the researcher listened to the audiotaped interview while reviewing the videotape of the lesson in order to understand the context within which thought units had been framed. The researcher, immersing himself in the data, read the trancsripts, considered codes and preliminary headings, and returned to the original audiotaped interview. Using a recursive and inductive approach, preliminary headings, each representing a distinctive and meaningful characteristic, were refined by the consideration of subsequent thought units. Once all thought units had been examined, particular consideration was given to those units of data which appeared to represent characteristics other than those already identified.

Following this examination, further characteristics were added, or existing characteristics modified, until all data could be faithfully described in the context of the identified characteristics (Merriam, 1988). Reference was made at this stage to other data sources, i.e., fieldnotes and semistructured interviews. Descriptions of each characteristic were then written, incorporating illustrative excerpts from the original transcripts. A draft of this section of the analysis was then sent to each participant for comment and validation.

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Relationships between guiding principles and inflight thinking. To explore relationships between guiding principles and inflight thinking, summaries were made of those principles and characteristics developed in the preceding stage of analysis. The researcher then studied each principle and characteristic, considering ways in which each may have been reflected in the other. Tentative relationships were proposed and tested by careful examination of data from the three sources, that is, researcher fieldnotes, semistructured interviews, and stimulated recall interviews. Where these proposed relationships could be established in the transcripts, they were described and explained. Where proposed relationships were not supported by evidence, either alternative relationships were considered or they were omitted altogether. In short, the researcher was not obliged to describe relationships that did not exist: Rather, only relationships that could be clearly validated by data were retained for interpretive analysis.

Cross-Case Analysis

Once the data relating to each participant had been examined and discussed as unique case studies, the researcher conducted an analysis of inflight thinking which extended across cases. To facilitate the process of cross-case analysis, a matrix was developed as a tool to clarify the different dimensions represented in the data (Patton, 1990; Riordan, 1996). Participants were each assigned a row and separate columns were then assigned for each characteristic of inflight thought. Where characteristics were shared between participants, these characteristics were entered in the same column, otherwise separate columns were assigned.

The presence of columns with several occupied cells suggested that those characteristics were common to more than one participant. The presence of empty cells, on the other hand, served to alert the researcher to characteristics which could have been manifested by a participant but which were not.

Headings were given to columns as a means of describing shared characteristics and these headings were used as the basis for discussion of cross-case inflight thinking.

Rationale for Data Analysis Procedures

The reasons for conducting the data analysis in the manner described above shall be examined in the section which follows. Three types of data were collected from each

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participant. The data were analyzed sequentially: a) Context, b) guiding principles, c) inflight thinking, and d) relationships between guiding principles and inflight thought. The analysis was also recursive, in that information from one data source was compared with another, throughout the process. In this study, the data analysis was inductive in nature, such that there were no predetermined variables but, instead, only emerging themes. Finally, the analysis sought to examine data from multiple perspectives. The analysis was conducted in this manner for two main reasons: a) To increase the authenticity of the study, and b) to strengthen the consistency of the results.

Authenticity

The concept of authenticity is similar to that of internal validity and addresses the extent to which the findings of the study represent the participant's reality. The position taken in the current investigation is that reality is subjective and created by individuals - - in this case the perspective of the participants and the perspective of the researcher. The task of the researcher in this context, then, was to represent, as accurately as possible, the reality of each participant, while acknowledging that the researcher was interpreter of the participant's experiences. Validity of the study, therefore, can be assessed by the degree to which participant perspectives have been truthfully and honestly rendered (Bogdan & Biklen, 1992).

Certain measures were taken during the data analysis to ensure that each case study reflected the perspective of the participant and made clear the interpretations of the researcher. These included a) triangulation, b) member checking, c) clarifying researcher perspectives, and d) thick descriptions, each of which is discussed below.

Triangulation. A study in which findings are based on the analysis of only one source of data has several potential limitations. One of these is that themes may emerge or interpretations may be made which are an artifact of that source of data. Another is that the findings may be a result of the interaction of data and researcher, rather than a reflection of the data itself.

These potential limitations were overcome in the present investigation by using three sources of data in the process of analysis. While interpretation of participant's reality began with one source of data, those interpretations were tested and revised on the basis of data provided by the other two sources. In this study, then, triangulation of

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analysis supported the development of a more authentic and truthful representation of the participants' perspectives (Colaizzi, 1978; Marland & Osborne, 1990; Van Manen, 1990).

Member checking. Participants were provided with opportunities to review the analysis as it proceeded and contribute to that analysis where necessary. Once guiding principles and characteristics had been tentatively described, those descriptions were forwarded to each participant for comment. Participant comments, where they were made, were then incorporated into the analysis before final descriptions were written. Inconsistencies between participant meaning and researcher interpretation could be identified and rectified in this process.

Clarifying researcher perspectives. It was acknowledged that the perspective of the researcher, as research instrument, would be evident throughout the process of analysis. Clarification of the researcher's perspective was, therefore, a critical element in the provision of a distinction between perspectives of researcher and participant. This was done by writing a statement of professional perspectives (Appendix 1) in which the researcher's professional history and guiding principles were made explicit. The position statement was written in order to help keep distinct, or bracket, the perspective of the researcher in relation to the perspectives of the participants during the analysis of data. During the process of analysis, then, the researcher made reference to this statement to sensitise himself to interpretations of data which may have been based more on personal perspectives than on the data itself. As the findings of the analysis were written, the researcher attempted to make clear distinctions between his own perspectives and those of the participants by including illustrative quotes from the transcripts. By including direct quotes, the reader would be able to make personal judgements about the degree to which interpretations actually reflect the data.

Thick descriptions. When analyzing the data and describing interpretations in each case study, the researcher included "thick" descriptions. Thick description, in the present investigation, refers to elaborated and richly contextual descriptions of participant circumstances (Guba & Lincoln, 1988). As far as possible, the researcher attempted to include sufficiently detailed descriptions of as many aspects of the context as might be necessary to understand the findings. As well as assisting the reader to understand the

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findings, thick description was also presented in order to give readers interested in transferability of findings a "base of information appropriate to the judgement" (Lincoln & Guba, 1985). In other words, the researcher chose to provide sufficient information about each participant and his or her context, to permit readers to make individual assessments about the applicability of the findings.

Consistency

The concept of consistency, or dependability, is equivalent to that of reliability (Lincoln & Guba, 1985). It is acknowledged that more traditional views of reliability could not be maintained in the context of the present investigation since, if the study were repeated, it would be highly unlikely for identical findings to emerge. This is, however, an expected feature of research in which it is assumed that the phenomenon being studied is constantly changing, multifaceted, and highly contextual (Merriam, 1988). Thus, the concept of consistency refers to the extent to which the findings of the study are, indeed, consistent with the means by which they were derived, i.e., the extent to which the results make sense.

In the current investigation, consistency was maintained by a) clarifying the perspectives of the researcher, b) clarifying the procedures used in the investigation, and c) triangulation.

Clarifying researcher perspectives. Clarification of the researcher's perspectives strengthened both the consistency and authenticity of the study for similar reasons. By making clear the researcher's experiences, biases, and perspectives, the reader should be able to understand the reasons for the study, its implementation, and the context within which the study was conducted.

Clarifying the procedures. The procedures used in the analysis and collection of data are described in detail in the preceding section and in the section which follows this. In terms of analysis, a description was provided of methods used to reduce the data, to identify principles and characteristics from the data, and to identify relationships between principles and characteristics. These descriptions provide an audit trail. An audit trail is of particular importance for these types of data: the trail enables readers and other researchers to understand how the findings were derived by providing sufficient

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detail to allow others to authenticate the study (Goetz & LeCompte, 1984; Guba & Lincoln, 1988; Merriam, 1988).

Triangulation. In the same way that triangulation of data analysis provided a more authentic representation of participants' perspectives, triangulation also strengthened the consistency of the study. Because reference was made to more than one source of data, interpretations could be checked and revised to ensure that the study's findings were consistent with the reality of each participant (Merriam, 1988; Morine-Dershimer, 1983).

Summary

Analysis of data collected in the present investigation was conducted in an inductive manner typical of descriptive research. The individuality of participants' perspectives was reflected in single case analyses which formed the basis of five case studies. In analysis of data relating to individual participants, a sequential but recursive process was employed. Three sources of data were used to examine the context and guiding principles of the participants, their inflight thoughts and the relationships between those thoughts and guiding principles. While analysis of each of these different aspects began with examination of one data source, reference was made to the remaining two to ensure a truthful representation of the participants' perspectives. This use of multiple perspectives was extended by conducting a cross-case analysis of the inflight thinking of the five participants.

A rationale for the data analysis procedures was then presented. Support for the authenticity and consistency of the study was discussed in the context of an interpretive research perspective.

Procedures

The section which follows is an overview of the procedures used in the present investigation. Detailed explanations of participant selection, data collection, and data analysis have been provided in earlier sections. The purpose of this section is to make clear the way these aspects of the study were integrated into an overall plan.

The study took place in four stages: a) Gaining entry, b) pre-teaching data collection, c) lesson recording, and d) post-teaching data collection.

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Stage One: Gaining Entry

In Stage One, entry to the school setting was gained. Gaining entry involved the identification and selection of participants. Once participants had been selected, an initial visit was conducted in which details of the study were explained and questions answered. In this early meeting, the researcher was also able to begin to understand the context in which each participant was teaching; the physical aspects of the school and class, the other staff, and the feel or culture of the school. This stage, from first contact with the educating authority to completion of initial visit, took, on average, ten weeks.

Stage Two: Pre-Teaching Data Collection

Next, the more formal investigation took place. The purpose of this stage was to investigate the context in which the participants were teaching and to explore the principles which guided their teaching. The two semistructured interviews were conducted with each participant. These interviews were conducted at the participant's school and were separated by, on average, one week. In addition to conducting the semistructured interviews, the researcher developed his understanding of the participants' context by noting aspects of the school routines, and interactions between participant, other staff, and researcher outside the formal interview structure. Development of rapport between researcher and participant was a feature of this stage of the investigation. The researcher shared information about his own experiences in order to encourage a sense of trust in the participants.

Stage Three: Lesson Recording

The purpose of the third stage of the investigation was to explore the nature of inflight teacher thinking, the focus of the study. This stage began with a visit to the class in which videotaping would be taking place. In most cases, participating teachers invited the researcher to introduce himself and explain the process of investigation. Students sometimes asked questions about the research, and the researcher spent some time in the classroom watching a lesson being taught.

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At the next visit by the researcher to the classroom, the videocamera was set up and a portion of the lesson videotaped. The purpose of this activity was twofold: To check for the optimum camera position, and to desensitise participants and students to the presence of the videocamera. Most participants subsequently arranged for the students to see a segment of the videotape. This, again, helped to desensitise students and participants to the videocamera and the recording of a lesson.

Once a mutually convenient time had been agreed, the researcher arranged to have a videocassette recorder (VCR) and audiotape easily accessible and the videocamera and microphone set up in the classroom as the lesson began. The whole lesson was then videotaped. Usually, but not always, the researcher was in the room while the videotaping was taking place. Although in the room, however, the researcher was usually seated at a distance from the camera and was engaged in an activity such as notetaking or writing which would not unduly attract the attention of the students.

Stage Four: Post-Teaching Data Collection

The fourth and final stage of the investigation took place within five minutes of each videotaped lesson's conclusion. The participant and researcher watched the videotape of the lesson and the stimulated recall interview took place. This interview took place either in the vacated classroom or in a room close to the classroom where there would be no interruptions. Five to seven days later, the process of videotaping and stimulated recall interview was repeated.

Three weeks was the average time which elapsed between the lesson in which the researcher was introduced to the class and the final stimulated recall interview.

Ethical considerations

In this section, a description is provided of the steps taken to ensure that the current investigation was conducted in an ethical manner. It should be noted that ethical standards of the Department of Educational Psychology, University of Alberta, had been observed and approval given prior to the commencement of the study. Approval to conduct the study had also been granted by the relevant education authorities in Canada and Australia prior to contact being made with the schools. A condition of this approval was that ethical standards would be observed.

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Reference is made in the section which follows to both participants and students. Participants, in this context, means teachers who had consented to participate in the study. Students were those taught by the participating teachers. In particular, students were members of an inclusive class taught by the participants, in which videotaping took place prior to the stimulated recall interviews. Although the videotapes were not a source of data, they were used to provide cues to assist the participants to recall their thoughts during that lesson. Ethical considerations shall be described in regard to these students who, although not participating in the research, were a fundamental aspect of that research.

Explanation of the Nature and Purpose of the Research

Participants

It was recognised that before prospective participants consented to become involved in the study, they would need to understand the precise nature of their participation. For this reason, the Principals of the schools where each participant taught had been briefed on the nature and purpose of the research at an initial meeting with the researcher. A letter describing the study had been left with the Principal (Appendix 3). Principals at some schools provided a general explanation to staff, while, at other schools, the researcher provided this introductory explanation to all staff. Prospective participants at each school then met individually with the researcher, at which time more detailed explanation of the nature and purpose of the research was provided and teachers were able to discuss details of concern. At this meeting, prospective participants were given an information letter which summarised the key features of the study (Appendix 4).

Students

Students in the inclusive classes taught by participating teachers were seen in the videotape record of classroom teaching but were not the subject of the current investigation. Nevertheless, it was considered necessary to inform students and their parents or guardians of the nature and purpose of the research and obtain approval for their involvement.

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A week before the anticipated date for videotaping the lesson, an information and permission note was sent to students in the target class. The nature and purpose of the study was briefly outlined in this note. At approximately the same time, the researcher spoke with the students as a class group, explaining the nature of the research and answering students' questions.

Informed Consent

Participants

Once the nature and purpose of the research had been explained to prospective participants and questions answered, those teachers were given a form on which to indicate their informed consent (Appendix 5). One week later, the researcher returned to the schools and collected signed consent forms. These were then kept by the researcher.

Students

Informed consent of students and their parents or guardians was indicated by the use of a permission note sent to the parents or guardians of each student (Appendix 6). At one school, the Principal recommended to parents that they indicate only if their child was not to be involved. At the other three schools, parents returned permission notes indicating their consent or refusal of permission to be videotaped. Permission notes were returned to the school. A list of students who had consented to appear on the videotape was then compiled by the school and made available to the researcher. Only one parent (at the Australian school) indicated that her daughter was not to appear on the videotape. During the two lessons which were subsequently videotaped, that student worked independently in the school library.

Provisions for Withdrawal from the Study

It was made clear to all participants, both in writing and verbally, that they could, at any time, withdraw from the study without penalty. Participants were told that they could inform the researcher of their intention to withdraw from the study either in writing

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or verbally. By signing the consent form, participants indicated their understanding of this provision, however, none chose to withdraw from the study.

Confidentiality and Anonymity

Original sources of data, fieldnotes and audiotapes of interviews, were kept in a secure location. Videotapes used in the stimulated recall technique were seen only by the researcher, the participating teacher, and, in some cases, the students in those classes. Audiotapes were transcribed by either the researcher or an assistant who was familiar with the demands of this task and had agreed to maintain the confidentiality of those transcripts. Identifying information, such as names of individual teachers, students, or schools, were removed from all transcripts of interviews and replaced with pseudonyms. Participants were provided with lists of first names beginning with the same letter as their own first names and invited to choose their own pseudonyms. Some participants chose from these lists, others chose pseudonyms from other sources. The names Laurie, Denise, Lysander, Max, and Christine, therefore are pseudonyms of the participant's own choosing.

In the individual case studies, every attempt was made to avoid including material which might identify participants or the schools in which they taught. Participants were given drafts of their own case study and given the opportunity to modify or remove material which they believed might compromise their anonymity.

Courtesy

Finally, the researcher sought to recognize the commitment of participating teachers by ensuring that all interactions were conducted in a courteous and respectful manner. Since it was the perspectives of those participants that the study sought to reflect, their experiences, skills, and knowledge were acknowledged and applauded.

All visits to participants were conducted at times which were convenient to those teachers. Where the researcher was delayed, phone calls were made apologising and seeking alternative convenient times. Where participants sought to alter meeting arrangements, this was agreed to without hesitation. The researcher acknowledged the potential disruption to the school's operations by meeting with each Principal at the conclusion of the study and thanking them for letting him work at their school. At the

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conclusion of the data collection stage of the study, greeting cards expressing the researcher's thanks were posted to each participant. Copies were made of the videotapes used in stimulated recall interviews and given to each participant.

Chapter Summary

In this chapter, the methods used to conduct the present investigation have been described. It was acknowledged that, in a qualitative study such as this, the provision of a thorough account of the methods used is particularly important. The authenticity of the study, and the degree to which its findings may be considered a truthful and consistent representation of the participants' realities, depend largely on the quality of the methods used to obtain and analyze data.

The chapter began with a description of the five participants and a detailed explanation of the procedures used for selection of those participants. A rationale for that selection was then presented. In the section which followed, the three data collection techniques used in the current investigation were introduced. Researcher fieldnotes, semistructured interviews, and stimulated recall interviews were each described and examined. An explanation was provided of the way that each technique was used to compensate for potential weaknesses of the other. Following this description of the techniques used for data collection, the data analysis process was then scrutinised. In addition to an explanation of the procedures, a rationale for those procedures was presented. In this section, the choice to analyze the data in an inductive, sequential but recursive manner was justified in terms of authenticity and consistency.

The four stage procedure employed in the study was described in the next section. An explanation of ethical considerations concluded this methods chapter.

In the chapters that follow, the results of the current investigation are presented as five case studies. It is asserted that, as a consequence of the methods used and described in this chapter, these case studies represent an authentic and truthful depiction of the perspectives of the five participants. Further, a detailed description of the methods used in this study has been offered to assist the reader to determine the extent to which implications of these case studies may be generalised to other contexts.

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CHAPTER FOUR

An Introduction to the Case Studies

This chapter begins with this general introduction. The remainder of the chapter, however, is the first in a series of case studies, of which there are five. In these chapters the qualitative data are presented and analyzed. All five of these case studies are unique and distinctive, and therefore can be considered separately. It is asserted that, in descriptive case studies such as these, many variables exist (Merriam, 1988) and no assumptions can be made about their identification or assessment of their importance *a priori*. Accordingly, no significance should be attached to the order in which they are presented in the chapters that follow. Indeed, each case study stands alone and the series could be read in any order.

Each case study is divided into four main sections: a) An examination of the participating teacher, b) information about the context in which she is teaching, c) description and analysis of the teacher's inflight thinking, and d) an exploration of relationships between the teacher's guiding principles and inflight thinking.

The first section, "The Teacher", is divided into three sub-sections in which a) the teacher is described in terms of a "Focussed Life History" comprised of a personal profile and b) information about how s/he teaches, both of which are in the teacher's own words. Next, c) the teacher is described in terms of the principles which guide her/his teaching. Those principles are further divided into those which relate to teaching in general and those relating specifically to inclusive education. The section providing information about the teacher concludes with a brief summary.

In the second section, based on researcher field notes, the context of instruction is reported. This context section includes a description of the school, the classroom, and the lessons delivered by the teacher within that classroom.

The third section contains a description and analysis of the teacher's inflight thinking as it relates to the lessons that were observed. This analysis and description is regarded as the core of each case study because it relates most directly to the research question being addressed in the overall study. Characteristics of the teacher's inflight thinking are identified, analyzed, and discussed in this section, which concludes with a short summary

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The fourth section consists of an examination of the relationships between the teacher's guiding principles and inflight thinking. Interpretation of these relationships, while thematic in nature, is organised in two different ways. In terms of Laurie, Denise, and Lysander, the relationships between inflight thought and guiding principles were more clear - - presence and absence of guiding principles in the inflight thinking of these participants were more evident. Themes were classified, therefore, using the names of the guiding principles. In terms of Max and Christine, however, relationships between inflight thought and guiding principles were less clear. For these partipants, distinctive "higher order" themes could be derived and relationships were classified according to these themes to avoid restrictive interpretations.

The final section of each case study is a summary of the key features of the preceding chapter.

Case Study One - Laurie

This first chapter in the series, chapter four, is concerned with the guiding principles and inflight thinking of the participant who shall be known as Laurie. Laurie teaches social science and religious education in an inclusive junior high school class in western Canada. She appeared to be a happy, outgoing woman and had been teaching for approximately fifteen years, the last nine of which had been at the school in which she was interviewed.

The Teacher

Focussed Life History

In the following section Laurie introduces herself and provides some insights into her life and her teaching. The words used in this section are those of Laurie, compiled from transcripts of semistructured interviews, or from researcher fieldnotes.

> A personal profile. My name's Laurie. I teach social science and religious education in a Catholic junior high school in a city in western Canada. I describe myself as a humanitarian because of my own personal experiences, the

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losses and tragedies I've witnessed, and because making a contribution to my own society is very important to me.

Although my parents were immigrants from Italy, I've grown up in this city. My parents, when they came here, found themselves in a new world. They couldn't relate and they couldn't help me to adjust and integrate. Nobody was there for me along the way: I had to teach myself. I had to learn to be my own teacher even though I was told that I'd never do it. Books became my friends.

I had some unhappy experiences with my teacher in elementary school, terrible. It's always been a fear of mine that without realising and thinking I could make kids' school lives unhappy in the way this teacher did mine. That's a reason why I have this goal that none of my kids will ever be victims of my teaching.

I graduated from the university in this city with a Bachelor of Education. My very first part-time job was in the school year 1980-81. I was working in an inner city school that was both an elementary and a junior high school. In the next school year, 1981-82, I began my first full time job as an elementary teacher in a different school. This was an elementary school and I taught grades two to five.

While I was there I started to get interested in gifted education and I went to some inservice courses. I think that gifted education was the milestone that changed me. I see myself as someone who's always wanted to reach all kids but gifted ed gave me the tools. I now had a starting point of ways that I could reach all kids. From then on I just elaborated and created and hitchhiked; I used the tools to create my own methods of teaching. Gifted changed me entirely; emotionally, psychologically, and philosophically. It got me looking at all people differently and it got me thinking "everybody should have this, what's the big diff?" In all my studies, the discovery, the key, was the inner child, building up the person inside.

After a while at this school and as I became more interested in gifteded, the relationship between me and most of the other teachers became strained. It was a negative experience and the Principal didn't support me. I remember one incident when some other teachers criticised the quality of work presented by my class in a school gallery. My kids' work, though, was work for which they had taken personal responsibility and which was, at least, original. Work from other

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classes may have been more attractively presented but was essentially plagiarism, copied out of the book. But it dawned on me that the students from other classes were plagiarising because they didn't know any other way: it wasn't their fault. When I said this to the other teachers most of them were upset. That's one way that gifted ed had changed me, though, I always think that if I'm not doing something right it's because I don't know how to do it any other way.

In 1985-6, because the situation at my elementary school was not a positive one, I was offered a position at a neighbouring junior high school. I transferred in 1986-7 and I've been here ever since.

For two school years I worked at this school as a support teacher (gifted education), concentrating particularly on language arts and social studies. I worked with other teachers and was involved in development of gifted ed policies at a school and district level. I enjoyed the switch to junior high, because I felt more able to express my own feelings than I had in my previous position.

Since the beginning of the 1990-91 school year, my role changed to that of a teacher of the regular junior high school program. I now teach mainly social science and religious education. I think social studies is the perfect subject for me to be teaching at this stage of my career: it allows me to teach the kids about issues I believe are critical to mankind.

As a teacher I think I'm very reflective, I don't need to be evaluated to change. I love people who challenge me.

Teaching information. I've been asked to describe some of the things I do as I teach in this class. I differentiate the curriculum so that it can be of benefit to everyone. I give kids ways to remember, using webbing, associations, symbolism, because that helps everyone. I work in modules. I've written these booklets, so that for the kids who can't write or get organised, the assignments are all in there. If you look at the textbook, an average to high academic student could have difficulty with this. So what I've done is write down whatever I would say out loud so that the kid who didn't get it orally can now read it. If you did get it orally, it goes to your favour, right? I designed the pages or sections the way I want them to take notes, so that they're not copying right out of the book. I don't want them copying the book, I want them to read and isolate the facts.

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I've developed this system called "Expectations and Evaluation Procedures for Social Studies." In the system are three primary evaluation grids: Behaviour, Homework, and Binder Evaluation. The kids need to see their growth and development, that's why my marks are very simple. I do it intentionally: I want them to ongoingly calculate their marks. And I always show them marks, because they have three marks that are theirs (behaviour, homework and binder) and I say, "These are yours. Your can make these whatever you want." Then, if I have all my marks in and these three marks are added in, it's going to go up! I say to them, "It's like a reserve, you've got a safety net here. If you bomb an exam there's something that balances the skills." The behaviour mark really changes everything, it gives them hope, incentive, motivation.

It's also a visual system - - they see where they're making a difference. We constantly use these grids so it's internalised. When we all do analyses such as, "Compare the climate of Japan with that of Australia", we'd go, "Oh well, what's a 'two' answer?" and they might give me a one word answer. Then I'd say, "OK, so how can I make that a 'three' answer?" Once they give me an answer that is correct and clear I'd ask them why it was a "three" answer. The whole goal is that by the time I formally mark the students' work, they will have succeeded. The formal marking will be a confirmation to me that they've reached their goal.

I use a problem-solving approach in the classroom. One boy in my class has been getting into trouble. I said, "Well, what can we do? Let's sit here and plan what we can do to change things." In solving problems I always encourage communication strategies. The other day we talked about the school dress code. They didn't agree with it and I said, "You know what, this is the place we're learning how to take challenges." I explained to them that they wouldn't get very far if they went into the school office and said, "Well, my mother makes me wear this so why can't I?" I told them that if they really believe a rule should be changed then prepare a position, support it, think of what the other person might be thinking of and be concerned about it. Be prepared with all the right answers for these areas and then go risk. Propose an alternative.

I try to involve the kids in their own learning. I tell the students that they have to tell me what they need. Once they've identified that we'll sit and plan together how to get there. The Evaluation system is another way I get the kids

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involved. I know it works because every time I say to the kids, "I'm going to stop marking you like this," they're up in arms.

My job is to show kids how to do it. It's not me doing it, I want them to get the credit. I want to show off their work. I flaunt them and I name them and I'm proud of them.

I try to promote honesty and openness to the kids. They know one thing about me; my door will never be shut. They could tick me off and I could lose it one day but they can come back and they know they can negotiate and we'll open the door. They feel safe. I remember a while ago in one of our pow wows they said to me, "Well, you haven't been in such a great mood." And I said, "You're right. Absolutely. Why didn't you tell me? I would have explained it to you. Sometimes I feel that you guys want me to be superwoman!"

Guiding Principles

About teaching in general. Laurie is a bubbly and effusive woman in her thirties. Her passion and enthusiasm for teaching were evident within a short time of meeting her. Both the Principal and his Deputy acknowledged their respect for Laurie as a committed teacher who was teaching a diverse range of children and was both willing and able to talk about her experience.

Having heard her provide some biographical information and describe some details of the experience of teaching, the case study now turns to some exploration of the principles which appeared to guide her teaching. These principles were derived from the transcripts of semistructured interviews. In describing these principles, Laurie used a range of metaphors. One could be labelled a cooking metaphor, in which a "recipe" provided the plan or strategy needed for achievement of one's goal. Another was a security metaphor, in which an open "door" was the goal and a "key" could be considered to be both the strategy for achieving that goal and the resource needed to carry out the strategy. Finally, and more commonly used, was a construction metaphor, in which frequent reference was made to "building" and to "tools" which, again, may be considered to be both strategies or plans for achieving that goal and the resources needed to carry out that strategy.

Laurie's conceptions of the future of her students were clearly articulated. Further, she believed that students needed to develop their own conceptions of the future: "Children have to be aware of their tomorrow and know how they're feeding into

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tomorrow. And how they can make a difference." Her goal for students was to have them become independent and autonomous learners. In this goal she acknowledged, however, the importance of students' involvement in their own learning so that "any child can be where s/he wants to be."

Achievement of autonomy appeared to be synonymous with achievement of success, a concept used frequently by Laurie: "We're clearly working toward success." "Success" and "being successful" in this sense did not seem to imply a competitive notion nor the achievement of some tangible reward. Rather, it was used in a more general sense to refer to fulfilment of individual goals and contribution to mankind.

A goal for the teacher, employing the construction metaphor, was "building a resourceful child, an autonomous child" or helping them "to be the successful person that they should be." Laurie believed that a central characteristic of a successful person was a well developed "inner person." The key to opening the door to success, the recipe for making a successful person, the tool for success, and Laurie's guiding principle, was the building up of this inner person. In this reference to "the person inside," Laurie was making clear a distinction between observable displays of attainment or failure and such less readily observable human characteristics as emotions, self-concept, and motivation: "Probably the most important thing is the way the kids feel about themselves. The way the kids feel positive about their own learning and that they're involved in their own learning."

As a teacher seeking to build an autonomous child, then, Laurie believed that the most effective thing she could do was to attend to the development of the inner child. She realised that she could not do this herself, that the students had to take responsibility for their own development: "I'm not laying it out, you're setting your own goals." There are tools which she could use to facilitate this development, however, tools which she could then pass on to the students for their own use. Laurie articulated a guiding principle that she was "giving them tools to succeed. These kids want to succeed. Nobody wants to fail. Just somebody has to take the time to tell them how to do it. And if you tell them how to do it, they're going to do it."

Used in this sense, tools necessary for the building of the person inside could be both strategies for achievement of a goal or particular resources which an individual may need. A problem solving strategy in which students set realistic goals and are prepared to take risks was one such tool. When describing individual student progress, ability to use a problem solving approach, was often used as a measure of success: "When I get a

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Sandra, who's in grade seven, coming up to me and saying, 'You know what I did? I did it!' And her eyes are lighting up, and she's strategizing and she's problem solving and she's achieving and that [poor mark] is no longer a negative stigma."

More commonly, resources or tools needed by individuals to succeed are their own affective characteristics. Laurie made frequent reference to feelings of empowerment and the confidence to take risks. However although she spelled out her conviction that effort, commitment, and attitude were the secret of success, she did not define specific characteristics. From our conversations I got the sense that while there are some general tools that could be used there was no particular formula or blueprint. Instead, through an interactive problem solving approach, where "I'm meeting you personally, your own needs," strategies or resources needed by individual students are developed according to perceived need.

Another guiding principle was the development of a student's sense of identity. A sense of identity was understood to be a tool which could be used to build the inner child. While not sufficient for the development of a successful person, it was necessary if the inner person is to be developed. Laurie made reference earlier to her wish to give credit to students and to praise their efforts. This may be interpreted as another aspect of the development of student identity. Explicit praise was given to students for the observable products of their work. Laurie's willingness as a teacher to engage in open exchanges with students, however, acted as a more subtle but significant way of giving credit for a strengthening of identity.

It was interesting to note that a sense of identity includes positive feelings about themselves and their sense of belonging to a group or team. In the context of a discussion about students in grade eight, Laurie observed that these students are in limbo, being at neither the beginning nor the end of their time in junior high school. She mentioned that she had been talking with her Principal about this and that she wanted to do something for grade eight: "I want to create a belonging." Partnerships between individual students and herself as teacher were also valued as were cooperative relationships between students: "I know this is working because now I'm having special-needs kids coming in and praising each other, patting each other on the back, coming to tell me their successes." Given her emphasis on the inner child, it was perhaps not surprising that while believing in the value of belonging, Laurie rejected grouping on the basis of ability: "I find names, labels, destructive. I find it affects the child."

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In facilitating student's use of different tools, Laurie was guided by a principle of establishing an environment which was safe for all the students, an environment in which different tools could be demonstrated and their use practiced. Laurie laughed as she recalled an incident illustrating the effect of a safe environment in which a student felt able to criticize the teacher's actions:

> If somebody makes me laugh, I'll laugh. Right? We were running this test and my secretary buzzed me and she said something funny and I started to laugh. So Penny, who's a real keener, an honours student, said "Miss M, I have to tell you that we're writing our test and you started to laugh. It really interrupts my thinking." I'm going, "Well, ah, why didn't you tell me?" She says, "We are. Right now." But they feel safe, because they have to have a voice and it's very important for me to build that strength, and their voice.

The incident above suggested that having a voice was an indicator of the sense of identity which was highly valued by Laurie. She interpreted Penny's assertion of individual needs as an indicator of inner strength and identity. The recalling of this incident was typical of Laurie in that she often made reference to individual students. It became clear that, in addition to an awareness of their observable behaviour, she was both aware of and concerned for their development of personal identity.

Related to the development of identity and to establishment of a safe environment was honesty and awareness of each other. As a guiding principle, it often emerged in comments made by Laurie about her teaching. In a safe environment, students are more likely to be honest and open. Comments they make and interactions between people in the class help to develop an awareness of individuality which, in turn, allows those individuals to develop a sense of their own identity. Laurie maintained that honesty and awareness of each other applied to herself as well as to other class members: "It's again this awareness of each other, right? I often say to them, 'I'm in a bad mood. I'm letting you know that right now so if I snap at you it has nothing to do with you. And if I have hurt you along the way, please tell me and I will be the first to apologize.'"

In this wish to avoid hurting students, there appeared to be echoes of comments made by Laurie earlier in this chapter in relation to her own unhappy experiences in elementary school. Honesty and awareness of each other were, therefore, both tools for development of the inner child and characteristics of a successful person.

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About inclusive education. Laurie made clear her desire to reach all kids. As has been discussed above in terms of individual identity she did not, however, believe that all students are the same. Laurie's language revealed a consciousness of exceptionality on different dimensions: "gifted kids," "special needs kids," "high academic kids," "behaviourial kids," and "ESL kids." The defining feature of exceptionality, however, seemed to be in relation to Laurie's ability to facilitate effective learning: "The only time children stand out to me is when they've gone beyond the point of where I think I can't help them any more."

The concept of inclusion created some difficulties for Laurie. She was prepared to accept a description of the target class as an inclusive class only because she had been told that it was by the school administration, not because she had identified students who had particular labels. After being told of this description, incidentally, Laurie looked up a list and "there they are!" Rather than describe her class as inclusive, however, Laurie would prefer to describe them as "a class of children who are here to learn."

In terms of her guiding principles and the techniques she uses in the class, she appeared to make no distinction between a class which carried a description of inclusive or non-inclusive. This seemed to be derived from her feelings of guilt that teaching approaches used earlier in her professional life for gifted students were not being used for all students. It was clear, however, that for Laurie inclusive had close connections with special needs or with the teaching of students who were having difficulties with learning rather than with those who were excelling at school. This was demonstrated occasionally in her conversation when she used the term, "inclusive kids," to refer to students who were neither average nor gifted: "You know, you can have a child, an inclusive child, or even gifted child, it doesn't matter, an average child, but let's take an inclusive child, special needs child."

Inclusive class, then, was an administrative title applied to describe a class which contained students who had been given a particular label. Moving from the class to the student level inclusive, for Laurie, could be used as a synonym for special needs. In earlier discussion of the development of a sense of identity, however, Laurie was adamant that labelling of any sort was not something with which she felt comfortable as it has a damaging effect on the student.

As in the exploration of Laurie's guiding principles, it became clear that reference to the class as a single unit was hardly ever made, a class was a group of individuals and

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"every child has an area of need," and it was in reference to the teaching of individual students that Laurie's exploration of the meaning of inclusion became more detailed. In her teaching she aimed to reach all students and encourage them to think of themselves as individuals rather than in comparison to other students: "When I talk to a black child it doesn't dawn on me she's black, or he's black, I'm talking to a person. So when I'm teaching I don't give a hoot if you're IOP [Integrated Occupational Program], ASP [Academic Support Program], gifted, or in the middle." The principles outlined earlier, building the inner child by providing the tools to succeed, applied equally to all students in Laurie's class even though the tools could be different in kind or degree. Laurie, acknowledging different rates of learning, expressed a confidence that, if necessary, building the inner child should even be done at the expense of curriculum content: "My choice, I would scrap all this [the ESL, the math, the reading] and have this [the way people feel about themselves]."

Turning to ways in which a range of needs can be met by teachers, Laurie referred to herself in the context of a broader network. Shifting from a conception of a regular program or an approach to education in which needs are met within the classroom, Laurie observed that:

> as in anything there needs to be a network in place. And this network will address various aspects of children's learning journeys that will help them to get to be the successful people that they should be. So, for example, when I hear inclusive program, I'm looking at a program that has a network in place that is looking at specific children and that together as a team we're helping this child reach point B.

So while the aims for all students are the same, one teacher may not be able to address all the needs of all the students. Laurie visualised an inclusive program beyond the individual classroom; the classroom was a vehicle for learning and the classroom teacher was the person best suited to address that central concern of building the inner child. It may be that this opinion had been shaped by Laurie's earlier professional experiences as an elementary teacher. The elementary school situation could be contrasted with the junior high school situation in that, in the former situation, there is usually one classroom teacher. In the latter situation students may have a variety of teachers. The target class being discussed, however, was also Laurie's home room class

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which she saw at least once a day. This identification of a home room class with one 'home room teacher' appeared to be the junior high school equivalent of a classroom teacher and the context in which Laurie was placing herself.

But as a classroom teacher, "I can't do it all. And when I did think I could do it all, I was burning out and I was feeling guilty. I was taking responsibility, and I can't. There's got to be a system in place that can do these parts." "These parts" to which Laurie referred, were the other facets of a child's education beyond the building of the inner child: "If this child needs special reading, somebody in this network had better be sitting down with her and teaching her reading." Conversely, progress in reading may not result in significant achievement for a student if there was a failure to attend to the inner child. Laurie laughed as she recalled thinking: "When we just teach them reading, why aren't they changing? Why isn't their spirit changing? There has to be something else in place."

The concept of having in place a support network was a fundamental and defining characteristic of Laurie's conception of inclusion. In response to a question regarding the possibility of having inclusive education without support, Laurie replied: "No. Why should I? For me to label a program inclusive, that's only telling me that there's other support systems in place for that child, to build the other aspects of that child that I can't do." She went on to clarify this further: "I'm only using the term inclusive to define that there is a system in place here that is offering other services to that child."

Summary

Laurie is a junior high school teacher of social studies and religious education. Her personal history includes an experience of being her own teacher in the absence of significant parental support. It also includes negative experiences as an elementary student and in the early stages of her teaching career. A milestone in her professional journey was her involvement in the area of gifted education, which seems to have helped to crystallise some understandings about teaching, learning, and life in general.

Laurie is able to provide a clear description of the things she does as she teaches in her grade eight class, the context for discussion. This class, identified as an inclusive class, is her home room, social studies, and religious education class. As she describes the experience of teaching in her class she makes frequent reference to ways in which she facilitates student involvement in learning. Providing clear structures for learning is one

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aspect of this. Creating a safe learning environment and encouraging openness is another.

Laurie's teaching is guided by several principles. She identifies the goal for all people as achieving success, a term which for her means being an independent and autonomous learner. The key to this success is the development of the inner child. The teacher's job is to provide the tools which a student needs to build this inner child. While students may need a variety of tools to achieve individual goals, a sense of identity is a tool which is fundamental for all people. Having a clear sense of identity is necessary for development of the inner person but it is not, however, sufficient. To develop a sense of identity, the teacher should establish an environment which is safe, in which students can experience and practice taking risks. In this environment, there must be honesty and awareness of each other to facilitate risk taking and shape individual identity.

Laurie's personal and professional history can be seen to contribute to her guiding principles. On several occasions, she has found herself in difficult situations where the only resource available to her was herself. The degree to which these situations proved to be negative or positive experiences appears to have depended on her own self-confidence, her reserves of personal strength and her sense of identity. That a guiding principle in Laurie's teaching is the building up of an inner child with a strong sense of identity should not, therefore, be unexpected.

These guiding principles apply equally to all the students Laurie teaches. Nevertheless, she acknowledges that as a classroom teacher she can not meet all the students' needs by herself. In terms of the way needs are met, Laurie defines an inclusive education program as a support network. Within this network are a variety of people and resources. While, for Laurie, inclusive students are those who have difficulties learning, the inclusive program she advocates applies to all learners. Her preference, however, is to avoid labels altogether. Rather than referring to her class as an inclusive class she considers it a class of learners.

The Teaching Context

In the section which follows, the context of Laurie's teaching shall be presented. Information relating to teaching context was derived from researcher fieldnotes, written during and immediately after visits to the school.

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The School and the Class

The study of Laurie's inflight thinking took place in the context of a large Catholic Junior High School in a western Canadian city. St. Joseph's Junior High School is a French immersion school, not uncommon in Canada. My observations of the school and its operations suggest that for practical purposes this means the use of French and English for all general announcements, an added emphasis on the use of the French language in some subjects, and an expectation that all staff will have some fluency in French. In the context of the social studies and religious education lessons I observed, no reference was made to the French language nor was any language other than English used either in print or speech.

The class within which Laurie's inflight thinking was examined was a group which shall be referred to as 8M. A group of approximately 25 students, they were Laurie's home room class, meeting for a short time at the beginning of each day. The same group were also together for social studies and religious education, both subjects taught by Laurie. Consequently Laurie knew this group of students quite well, even though social studies was only timetabled once or twice a week.

8M appeared to be a diverse group of students with a reasonable gender balance. A range of personalities and racial backgrounds was immediately observable to the researcher. Subsequently, Laurie told me of the differing academic ability of the class. Although all students were permanent members of 8M and considered themselves as such, five were involved in the Academic Support Program (ASP), two were involved in the Integrated Occupational Program (IOP), and two were considered by Laurie to be gifted learners. IOP and ASP are programs which operate in public and Catholic high schools in this province of Canada.

Formal assessment has taken place of students registered in the IOP. For these students there is a focus throughout their time in high school on selecting and developing skills necessary for a particular occupational area. Government regulations exist stipulating that, although students involved in the IOP take more vocationally oriented subjects within their program, they must study a minimum number of certain core academic subjects. Mathematics, language arts, and social studies are considered core subjects. In an Australian context a description of mild intellectual delay could be applied to these students.

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Students involved in the ASP have been formally assessed and identified by a school based process. Although they are students who score either within or above an average range on an intelligence test, they are students who have demonstrated an inability to learn in a regular classroom environment. In an Australian context these students may be described as having a learning difficulty.

I observed 8M several times, sitting in on lessons and on one occasion accompanying them on a field trip to a local theatre. In general, they appeared to be a good natured group of students. Some students interacted less frequently than others while some were evidently the class "clowns." In short, they reminded me of many other grade eight groups of students in my own experience.

The room, in which all the lessons which I observed took place, opened off a long corridor on the ground floor of the school. Playing fields could be seen through windows along the wall opposite the classroom door. There was a computer onthe teacher's desk in the front corner of the room. The room was decorated with work samples and maps and had a pleasantly cluttered but busy feel to it. The students' desks are in three rows running from the front to the back of the room forming, in a sense, three large conference tables.

The Lessons

Investigation of Laurie's inflight thinking took place in relation to two lessons delivered in the classroom described above. I came into the room at the same time as the students and Laurie and set up the material for videotaping the first lesson as the students unpacked their bags. Students had finished unpacking their bags and the lesson had been going for a few minutes by the time the videotaping began.

The topic of this social science lesson was Brazil. The class had been engaged in a unit of study concerned with Brazil for a few weeks at this stage, and Laurie indicated her concern that the material contained in the unit be completed by the end of term. The students had social science only once a week and had missed the lesson the previous week because of a reorganisation to the school timetable.

As the lesson began, Laurie explained to the students ways that statistics were compiled and presented some comparisons between Canada and Brazil. She spent some time talking about street kids in Brazil, then walked around the room passing out activity sheets.

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As the sheets were being passed out, Laurie explained the activity that was to be undertaken in groups, and explained some concepts which were necessary for the activity. The students then began working on the group activity, remaining in the groups where they had been sitting. Each group was made up of approximately five or six students.

The activity involved one member of each group reading a section from the textbook while other students worked on questions from the activity sheet. Once the groups were all working, the level of noise in the classroom rose appreciably, and it became difficult for group members to hear the reader from their own group. During this time Laurie circulated around the room, sitting for a short time with one group of students, then watching the activities of other groups.

At the conclusion of the lesson, Laurie explained to the class a concept which had apparently caused some confusion for some of the students. She then asked a general question of the class and the lesson finished.

I had the material for recording the lesson set up in the vacant room before the class arrived for the second lesson which occurred a week after the first. Laurie arrived at the same time as the students, acknowledged me briefly and began bringing the class to order. Her manner was unusually abrupt and cold. The students had almost finished getting organised when Todd arrived, late and without the required book. Laurie snapped at him and sent him straight out to the front office with the instruction that he was to ring his mother and inform her of what he'd done.

The lesson, religious education, then commenced with students taking turns in reading aloud from a text about a fictional teenaged girl whose father has remarried after the death of her natural mother. In the section being read, the girl decides to run away from home and creeps out before dawn with her dog.

For the observer, the lesson had some quite distinctive phases. First was time spent with students taking turns reading. Laurie then initiated a class discussion on the subject of the girl's anger; how the reader could tell she was angry, what might have made her angry, people's reactions to grief. During this discussion, Laurie thawed visibly, becoming more relaxed and laughing with the students. The discussion then became more personal as Laurie used her own mood at the beginning of the lesson as an example of anger and the way mood can affect behaviour. As the lesson progressed, Laurie became more animated and it was evident from the way they turned to watch the

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speakers that students, who had appeared bored by the earlier reading activity, were now fully engaged in the discussion.

From a discussion about moods and behaviour in general, the lesson then returned to a focus on the text. Laurie brought the lesson to a close by briefly summarising some features of the lesson and then assigned homework. This seemed to break the class mood of engagement in a personal exploration of emotions and there were some light hearted groans. Despite this reaction, Laurie finished the lesson by thanking the students in a sincere and genuine tone for their warmth and their sensitivity to her. Several of the students said, "you're welcome!" and the lesson finished.

Without further comment, the students left the room and we began the stimulated recall interview. The emotional undercurrents in the lesson were evident throughout. Nevertheless, as we began watching the videotape, I was uncertain of the depth of those undercurrents and the reactions which watching the videotape might elicit from Laurie.

Nature of Laurie's Inflight Thinking

Examination of inflight thinking contained in this section was derived from transcripts of stimulated recall interviews. Examples of Laurie's thinking such as, "OK, I'm going out on a limb here," are included and are verbatim transcripts from these stimulated recall interviews. It must be stressed that, in this section, it was Laurie's recollection of her own thoughts that was being examined. As discussed in the preceding chapter, a range of procedures were implemented to increase the accuracy and completeness of Laurie's recollection. Nevertheless it is acknowledged that Laurie's recollection of thoughts may not be the same as those thoughts themselves. Where reference has been made to observable actions in the classroom, this information was derived from researcher fieldnotes.

There appeared to be three main characteristics of Laurie's inflight thinking which emerged through the stimulated recall interviews. These shall be identified as: "Heart thinking," "you guys!" and "lesson thinking." These characteristics are described and analyzed separately because they have peculiar or distinctive qualities. This is not to say, however, that they are mutually exclusive. Thoughts which may typify one characteristic could also exemplify another. An inflight thought about the students and their understanding of lesson content which reflects a depth of emotion would be an instance in which one thought exemplifies all three characteristics.

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As has been noted in the preceding methods chapter, the number of features which could be identified in a qualitative analysis such as this is almost limitless. In this case study and those that follow, certain parameters have been applied to those sections examining guiding principles and inflight thinking in an attempt to make sense of this complexity and to draw attention to features which seem to be important (Bogdan & Biklen, 1992).

As the data were being examined, recurring themes were noted and considered. Features of the data which occurred infrequently, though interesting, were kept aside and used to help interpret more common themes. The degree to which each unit of data could be described within emerging themes was considered, and those themes were consequently refined and developed. Interrelationships between themes were subjected to close scrutiny in order that their distinctiveness could be maintained. At least three or four main themes seemed to emerge for each participant, within which most of the data could be described. Subsequent themes were included only if they were supported by more than one unit of data, and only if they appeared to the researcher to offer a more authentic view of the participant, his/her inflight thoughts and guiding principles.

The process of triangulation was used at this point in the analysis to make more likely an authentic description of the phenomenon being explored (Denzin, 1978). Thus, multiple sources of data; observer field notes, and data derived from the earlier semi-structured interviews, were considered at the same time as units of inflight thought and, from this examination, characteristics of inflight thoughts were developed

Characteristic One - "Heart thinking"

A characteristic of Laurie's inflight thinking is that much of it occurred at an affective level. "Heart thinking" refers to thinking which is concerned with feelings and emotions. It includes affective thinking in relation to the students in the class, to the process and content of the lesson, and to Laurie herself. The name heart thinking is derived from comments made by Laurie in which she referred to some thoughts as coming "from the heart." Inflight thoughts were included within this characterization if they referred to affective responses by Laurie.

Some times this thinking is simply acknowledged: "I feel bad and guilty." At other times it becomes the object of consideration: "I'm uncomfortable with my irritation," and at other times this kind of thinking is related to some other thought, about

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the conduct of the lesson, for example. Inflight thinking of this nature occurred during both lessons although in different ways. Laurie's thoughts reveal heart responses to both observable and unobservable events and a constant fluctuation from high intensity to low.

Laurie's heart thinking is described below in terms of observable events, the students, and her own feelings and emotions.

Heart thinking and observable events. Heart thinking about observable events includes those thoughts not directly related to student action but to a more general monitoring of the lesson and the events going on in the room. General level of noise in the room is one such event, a direction taken by a class discussion is another. Laurie would observe an event but then go beyond the observation to register an emotional reaction to that event: "that racket is bothering me," and, "I'm pleased that everybody's into it."

The affective responses reported here, however, are not necessarily in reaction to observable events only. Field notes and reports of non-inflight thinking reveal Laurie's general feeling of anger and frustration as the second lesson commenced, which appeared to result in an intensification of emotions throughout the lesson. She reports that her emotional state as the lesson commenced had nothing to do with either the students themselves or the content of the lesson but with events in her own, private, life.

Laurie's affective responses covered a broad range of emotions, from annoyance and frustration to disappointment, fear and nervousness, relief and amazement. At some times quite an intense degree of emotion was disclosed. High intensity, however, related to both positive and negative emotional states and both were reported within the span of the same lesson. In the second lesson, Laurie's emotions range from "I'm pissed off," in reaction to the general level of noise in the class, to "I'm happy and rejoicing at the same time," in reaction to the emergence of a beneficial direction for class discussion.

Heart thinking is directed to Laurie's own action as well as to events not specifically related to the lesson. She curtly sends a student from the room but then thinks "I can tell that my patience is very, very thin by the way I sent Todd out ...." She speaks abruptly to the class but thinks "I feel bad and guilty." Heart thinking directed towards events not specifically related to the student's learning seem to be always in the form of irritability: "That pen is bugging me," and, "Damn, why do I have to go to the door now?"

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While Laurie described emotional reactions to immediate events, she also stepped back from time to time to consider longer sequences of action in the classroom. During the second lesson, Laurie listened to a student's explanation and felt that correction was needed. Nevertheless, she decided to let the student complete his explanation, which developed into an insightful and thoughtful observation. Stepping back and monitoring this sequence of events, Laurie revealed again an emotional response to her own actions: "I'm glad I didn't ."

Laurie describes feelings of frustration as she observes a sequence of events in the classroom leading towards an undesirable endpoint: "I could kick myself for not foreseeing this."

Feelings of optimism and hope regarding the direction of a lesson were not reported. Possibly a successful outcome of the lesson was assumed and hence not thought about at an emotional level as the lesson unfolded. Possibly heart thinking occurred more as a response to unforeseen events. This interpretation is suggested by reports of anger and frustration at interruptions, and of pleasure and satisfaction at "happy accidents."

Some of Laurie's affective reactions were to events that were about to unfold. In these cases she was aware of a sequence of action about to occur and registered an emotional response to that sequence. Usually this reaction was one of apprehension: "I'm dreading to see...." It was almost as if Laurie had an expectation that events would take a turn for the worst and so was pleasantly surprised when they did not: "I'm amazed at their level of involvement!"

Heart thinking and students. Heart thinking relating to the students, either collectively or as a group, was common. At some times emotional reactions were revealed which related to actions of students. At other times, however, heart thinking related more to the students themselves, to their personality and individuality.

While actions of the class as a group sometimes provoked negative emotional responses, these reactions appeared to be directed more towards the results of their behaviour than to the students themselves. Rather than registering a negative emotional response to the class as individuals, a heart response to the noise being made was more typical of Laurie's inflight thought.

Student actions, however, sometimes prompted feelings of frustration and tension. During a group activity, Laurie observed a group attempting to solve a problem.

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As she watched them, she responded to their efforts by thinking, "I'd love to tell you right now to do it another way." In general, however, her heart thinking as it relates to students reflects pleasure and satisfaction: "I'm really grateful that I've got this class."

Heart thinking about students relates frequently to individual students. Reflecting on the inclusive nature of the class, her thoughts are directed towards a range of students, there being no special awareness of students in terms of categories. As she notes individual student contributions, she thinks, "I'm happy that it's John," "I'm surprised that it's Ricardo," and, "I'm touched by her sense of humour." As she listens to one of the students who has special needs she thinks, "I'm really impressed and happy, right on JJ!" Her response to a high achieving student is equally positive: "Wow! You just said something really good here!"

In addition to inflight thinking at a heart level about individual students, emotional responses relating to the class as a whole are made. The notion of "you guys," in the sense of a collective identity, is examined in a later section but the intensity of Laurie's heart thinking is evident as she declares, "their honesty is awesome," and, "I realize how much I love them, as my students."

Heart thinking and Laurie's own feelings and emotions. A final form of Laurie's heart thinking, and perhaps the most complex, relates to her thinking about her own feelings and emotions.

This form of inflight thought occurred only during the second lesson, the lesson characterised by Laurie's anger and irritability prior to its commencement. Throughout this lesson, however, in addition to heart thinking about observable events and about students, Laurie was conscious of her own emotions and the interaction between her emotions, the lesson, and the students. While at the outset of the lesson she was acknowledging her emotional state, "I realize how irritable I am", as the lesson progressed her thinking reflected a gradual change in this state. "I'm comfortable with my irritability" progressed to, "I know I'm opening myself up and being very vulnerable," and then to "this is the best medicine I could have." A final reflection in this lesson is telling. As has been noted earlier, Laurie seemed surprised by positive outcomes. At the conclusion of this lesson, Laurie thanked the students for their comments and they responded with a sincere, "you're welcome." Laurie's inflight thinking reflects both her surprise at this outcome and her difficulty responding to their thanks: "They're genuinely thanking me! I ... It's hard."

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Heart thinking, which relates to Laurie's observable actions, has already been reported, however there is a blurring between emotional responses to action and to thought. Sometimes Laurie is conscious of the simultaneous nature of this thinking. In one lesson, her actions lead to an unexpectedly successful learning outcome, a class discussion in which all students are involved at a sophisticated level. As this occurs, she thinks, "I'm amazed! It's like I've split myself: one way I'm conscious of what I'm doing but then I'm almost shocked that it's happening."

A special form of heart thinking that needs to be described separately is concerned with risking and vulnerability. While this form of thinking is not expressly concerned with emotions it does reveal thinking which has a significance beyond attention to either students or lesson. Laurie's inflight thought indicates that student comments or anticipation of those comments have an effect on Laurie at an emotional level. While listening to an explanation from a particularly insightful student, Laurie reveals, "Todd is making me nervous." As another student is about to speak, Laurie thinks, "I'm afraid to listen to Wilma!" This personal vulnerability to student comment helps to explain why concepts of risk and safety occur throughout Laurie's inflight thought. When choosing to act in a particular way, Laurie expresses a notion of risk as she thinks, "I'll give myself another try" and, with a course of action seen as even riskier, "I'm going to do it but I'm petrified." Balanced against this perception of risk is the safety of the learning environment: "It's safe for me," and, "I'm happy that it's safe here, that they're relaxed and open to talk." This balance is summarised at a point in the second lesson when Laurie thinks, "here's an opportunity to create a safe environment and put myself at risk." Choosing to put herself at risk shall be examined in a later section but it is clear that, as a teaching technique, it is used at an emotional cost to Laurie.

Characteristic Two - "You guys!"

This characteristic of Laurie's inflight thought refers to her thinking about the class and its individual members. Thoughts exemplifying this characteristic are those in which specific reference is made to people in the classroom, either collectively or individually.

It must be remembered that this is a group of students who she sees on a frequent basis since they are her home room, social studies, and religious education class. It becomes evident that her thinking about students, individually or collectively, involves a

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sense of identity. For Laurie, students have their own personalities, strengths and weaknesses. Similarly, the class has a collective personality and characteristics to which she makes reference.

Her attention to individual students is quite explicit throughout lessons and seems to be distributed in a balanced manner through the class, irrespective of learning ability. Attention is paid to students identified as being stronger learners: "I'm watching Brittney and I'm amazed at the fact that she's got it at her age," and, "Nigel impresses me. Whoa, you can really peel the layers off the onion!"

But her inflight thinking also demonstrates awareness of students with special learning needs: "Judy, are you struggling?" and, "Dan's reading well." This awareness appears to be associated more with learner characteristics than it does to administrative categories. "I'm worrying about the kids who aren't strong at focussing" refers to students in terms of individual characteristics. Only once, however, is reference made to students' needs in relation to an administrative category: "That table stands out to me because there are two people, Dan & Judy, that are on the ASP program."

It can be seen that, in each of these excerpts, Laurie's thoughts are not directed to a generic student but to individuals who have personal characteristics which distinguish them from other individuals. Interactions betw een individual students and the larger group are also observed: "No wonder you have a crowd following you!" "I wonder how Judy is reacting to Dan?"

This inflight thought about individual students goes beyond attention to their actions. Laurie is clearly sensitive to the emotions and feelings of individuals. Some of her inflight thinking, concerned with the students, reflects an emotional aspect similar to that described as heart thinking. In this case, however, Laurie is attending to the emotions and feelings of students without reporting emotional responses of her own. At one stage, she resists a temptation to intervene in the discussion of a group of students because "they get frustrated when you interrupt them." In another incident there is good natured laughter when a student mispronounces a word in a passage as he reads to the class. Laurie's immediate reaction is, "I've got to make sure Paul realises that we weren't laughing at him but with him."

At an individual student level, Laurie's inflight thoughts often reveal a sense of pleasure in the actions or characteristics of the students. She appears to be favourably disposed towards students in general but, also, to be sensitive to individual achievements: "I'm pleased about Jean," "Dan's reading well," and, "I'm really impressed by John."

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Moving to consideration of the class as a group, Laurie's inflight thinking indicates her understanding of a collective personality. She makes frequent reference to characteristics of the class almost as if they form a single entity: "I want them to realize how intuitive they are," and, "you guys have a tough time talking about feelings." Laurie's tendency to refer to the class in the second person as you guys, rather than the less personal third person "them" or "they," tends to support this interpretation of a group with a collective personality with which she is immediately involved.

As the second lesson progresses her reactions are to the class as a group: "You guys are awesome," "You guys are so on the ball," "I appreciate them." This understanding of the class as one group then interacts with understanding of her own place in relation to that group. Inflight thoughts occur which suggest her own proximity to the group.

As she explains a concept to the whole class, she asks herself, "Are they with me?" As some students become distracted she thinks, "You guys, don't leave me now!" and "I'm losing some," implying a perception of increasing distance between herself and the class. Whether she attributes increasing distance to the group, as in the former example, or herself, as in the latter, is not clear.

As with individual students, Laurie's inflight thought reveals a particular sensitivity to the achievements and positive characteristics of the class: "I've got to tell these guys about their strength," and, "I'm pleased they came up with that (as an answer)."

In her inflight thoughts, then, there is a balance between consideration of the class as a single group with its own personality, and as individual students with their own personalities, strengths and weaknesses. Laurie alternates between these understandings according to her own affective state, the nature of the lesson, and the needs of the students.

Students as indicators. A final aspect of Laurie's thinking about the class and its individual members relates to her extrapolation from individual or small group to larger group. Following observation of the actions of an individual student, Laurie notes that "if I can't reach Judy, I've lost the group." Similarly, her inflight thinking about one small group's approach to a problem reveals her consideration of implications for students not being directly observed and, in the second lesson, a comment from Wilma is taken by Laurie to indicate a prevailing view of the whole class.

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These inflight thoughts suggest an acute awareness of the characteristics of individuals or groups which are the object of her thought. Extrapolation to another group would be meaningless unless Laurie was aware of the relative strengths and weaknesses of both the reference group and the group to which reference was being made. Laurie's inflight thought reveals that Wilma's comment is seen as being a valid representation of the thinking of the whole class because Laurie perceives Wilma to be a particularly insightful and honest student. In a subsequent explanation, apart from her inflight thought, Laurie acknowledged that "The most vocal person about pointing things out to me is Wilma. Wilma's raw ... she's got to have a voice and she'll tell you exactly the way it is." Hence, in Laurie's inflight thinking she discloses, "I'm afraid to listen to Wilma," and that Wilma's comment made her aware of how attuned the whole class was to the issue being discussed.

Characteristic Three - This Lesson

A third characteristic of Laurie's inflight thought is her attention to the lesson in which the participants, students and herself, are engaged. Features of this characteristic include reference to teaching techniques, making choices, and the content of the lesson. This does not necessarily refer to formal curriculum content only, since thoughts are sometimes directed towards topics which arise incidentally during the lesson. Thoughts characterised as teaching techniques are those things that Laurie does during the lesson related to student learning. Also included are inflight thoughts relating to the choosing of action, to the action itself, and to the monitoring of that action. Although Laurie's inflight thoughts sometimes follow this cyclic pattern, this is not always the case.

Teaching techniques: Monitoring. One teaching technique which is frequently revealed in Laurie's inflight thinking is that of monitoring, a purposeful observation which takes place on a frequent or continual or regular basis.

Laurie monitors the whole class, "I'm looking to make sure people are on task," "I'm noting who's listening and who's not, " as well as small groups and individual students, "he's not paying attention, he's throwing his ball still." These thoughts are usually in relation to observable actions but sometimes refer to less readily observable features of the lesson: "We've gone off from the story."

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These examples demonstrate explicit reference being made to observation and monitoring. More commonly, however, observation and monitoring are implied as Laurie's thinking reveals interpretation of student thought and action. Her thought that "I'm not holding everyone's attention" goes beyond a simple observation that the students are talking amongst themselves and reflects her interpretation that their lack of attention can be attributed to her holding of that attention. In another instance, Laurie observes that "Nobody is giving the answers and explanations I want," then, interprets this situation in terms of student understanding of the concept being explained: "This is not coming through." This interpretation subsequently leads her to make an hypothesis explaining the situation she has observed: "I've forgotten to explain 'cause and effect' before getting into the causes and ranking."

A particular technique Laurie uses to assist in the monitoring of the class is to take the students' perspective. At one stage in the first lesson, Laurie assigned a task to be completed as small groups. As the students started to work on this task, in groups of five to eight, the noise level in the class rose appreciably. Having noted this increase in noise, Laurie sat with one of the groups and took part in the activity with them. Her inflight thinking demonstrates that this was done for the purpose of monitoring the impact of the noise from the perspective of the students. First she thinks, "I have to find out for myself if I can hear the reader," and following her observation that she is having difficulties hearing the student, she notes that "What's happening to me is probably happening to other kids in this room."

Teaching techniques: Give them a chance (taking a risk). Another technique used by Laurie is to provide students with opportunities to learn for themselves and take chances. These opportunities are sometimes specifically designed but at other times they occur incidentally. Although opportunities for a range of activities may arise, Laurie's choice to take those opportunities is not haphazard but appears to be governed by certain overriding purposes. Giving students the experience of making their own decisions is such a purpose. A small group grapple with a problem assigned by the teacher and as Laurie watches them she thinks, "I'm holding myself back not to interrupt them, let them make their own decisions." A student presents what Laurie initially believes to be an inaccurate explanation of a concept being discussed. She gives the student an opportunity to learn, however, as she thinks "No, you're not going to cut this guy off, let him make his point." This appears to be an example of a situation in which a student is being taught

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the importance of taking chances, but more commonly this teaching is done by Laurie modelling this herself.

Modelling the taking of chances suggests a deliberate choice to do this for the purposes of teaching. It is difficult, however, to make a distinction in Laurie's inflight thoughts between her taking of chances as a personal strategy and as a conscious teaching technique. The class appear confused by an explanation which Laurie has given, so she thinks, "My example wasn't the greatest, I'm going to give myself another try at the board." At another time, observing students having difficulties with a task she has assigned, she notes "No, I'll give myself another chance; I want to prove myself wrong so I'll let them go."

While sometimes the taking of opportunities as they arise is perceived to be risky, in the sense discussed within the characterization of heart thinking, at other times it appears to be simply one of a repertoire of teaching strategies, as in the following examples: "their coming up with (this answer) is an opportunity for me," and, "I welcome another opportunity for humour."

This technique helps to explain a sense of spontaneity in Laurie's lessons and, at the same time, gives an insight into the complexity of Laurie's inflight thinking.

Teaching techniques: Making connections. Another technique used by Laurie is to connect learning for the students. Her inflight thinking reveals that a number of issues arise throughout lessons and that Laurie attempts to show students how these issues connect with each other and with understandings of issues. As the focus of a lesson shifts from one issue to another, she observes "I've got to make a connection here," and later, as she searches for an example which will provide a connection between the current lesson and the students' experiences, she asks herself, "What's a relevant example? One they can relate to?"

This need to connect becomes particularly important when a lesson appears to have significant shifts in focus and hence, during the second lesson, her inflight thinking indicates a desire to provide explicit connections for the students: "Let me link this to the curriculum at a personal level for them." Once their reaction indicates an understanding of the concept being discussed, her thought "I'm happy and rejoicing at the same time because I've got something concrete that they can relate to," again refers to the importance of connecting classroom learning with students' own experiences.

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In addition to these connections, Laurie reflects on the importance of connecting sequences of lessons. As one lesson opens, the students remind her that some time has passed since their last social science lesson. As she revises the last lesson she acknowledges the significance of prior learning to the development of new understandings: "They don't know some facts which confirms the need to lay a foundation." As the lesson finishes, then, she makes reference to a connection with future lessons: "Then when we come back I can take off where I would have loved to have started."

Teaching techniques: Evaluating. Ongoing evaluation of her own teaching and of student learning is a feature of Laurie's inflight thought. Determinations of relative success or failure of an activity or explanation appear to be based mainly on monitoring of student reaction. There were examples of both formative and summative evaluation. In the former case, suggested by use of the present tense, Laurie sometimes used evaluation to made modifications to the current lesson: "Judy's comment and confusion indicates that I'm going to have to elaborate," and, "This is not the best ... I have to do something to fix this up."

In summative evaluations made at the conclusion of particular sections of each lesson, Laurie reflected that "Maybe this wasn't so bad" and "Don't think I was clear." Summative evaluations sometimes lead to thoughts which relate to the conduct of future lessons, thoughts such as ways to improve future lessons: "This lesson would have been better/more exciting if we'd have a group discussion based on a film or a piece of information about street kids."

Making choices. Choosing to engage in a certain action was usually preceded and informed by inflight thoughts related to monitoring of the sort described above. While observing, monitoring, and the interpretation of these thoughts has been described above as a general feature of Laurie's teaching, it has particular significance for the way in which she made choices during the lesson. Choices were made which resulted in a change in the flow of the lesson and other choices were made to continue with the current activity. Choices to change were often related to issues of time. As time passed in the first lesson and Laurie became aware of the need to cover additional material, her inflight thoughts revealed a definite decision to intervene in lesson activity: "Close up ... get the sheets out as quickly as possible." By contrast, as she watched students working on a

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problem, she made a decision not to intervene: "I'm not going to tell even though my instinct is to."

It is worth examining, in detail, a particular instance of Laurie as adapting the lesson according to an opportunity which had arisen incidentally. In this example, inflight thinking associated with making choices and taking opportunities may be observed.

During the second lesson, Laurie was leading a class discussion on the subject of grief and how it might be displayed. In the questions she posed to the class concerning the text being read, she was attempting to make clear that observable anger may be associated with less observable emotions, such as grief. More precisely, that while the girl in the story appeared to be angry with her father, this may have been a reaction to her own grief at the loss of her mother. During this discussion, Laurie's inflight thinking displayed an emerging awareness of parallels between her own situation and that of the girl in the story: "I'm picking up personal themes as I'm listening. They're in bold letters, the anger part."

Acknowledging feelings of guilt that her anger may be impacting on the class, she sought to turn this situation to some advantage for the students: "I have to make sure that it becomes of educational value." Soon after, she thought , "Hey, I've got one of my dream-type lessons coming up!" recognising, in a flash of insight, a potentially beneficial course of action which could be taken. The choice was this: "They're experiencing it - - do I, or do I not, put myself on a limb and use this story and my experience right now with these kids to make the lesson as enriching as possible?" One course of action being considered, the "not" side of the equation, would have been for the lesson to proceed uninterrupted. The other choice was to describe her own situation to the class and use this as an illustration of the concept being taught.

It was clear from her use of the "on a limb" metaphor that the second choice carried with it some risk for Laurie. The risky feature of this choice appeared to be that by revealing aspects of her personal life she stepped outside a teacher persona and put aside the protection offered by that persona. Without such protection she became vulnerable to student comments which touched her at a personal level. An implication of this was that, as a teacher, she would be prepared to deflect those comments not relating directly to teaching and learning. Laurie seemed to be well aware of parameters surrounding the teacher and individual roles and, as these parameters were approached, she felt increasingly uneasy.

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Immediately following the recognition of the choice to be made concerning direction of the lesson, Laurie revealed unease and uncertainty: "I'm nervous," and, "Do I go for it?" Nevertheless, thinking "OK, I'm going out on a limb here," she chose to take the riskier option. The subsequent discussion was, as Laurie had anticipated, initially difficult for her to accept as the students made some penetrating insights into her emotional state: "Their response has made me feel worse. I feel terrible. God, it's really obvious." The students were, however, also able to extend these insights to the situation in the text being discussed and their comments indicated a good understanding of the concepts which were the subject of the lesson. Laurie's choice to use her own situation as an example was, therefore, validated by the subsequent discussion and her inflight thought: "I'm so happy, I've succeeded," demonstrated her acknowledgement of the effectiveness of this choice.

Although it has been suggested (Shavelson, 1983) that teachers' decisions most frequently involve a choice to continue with the current course of action, the vignette described above illustrates the power of choosing to engage in alternative courses of action. The choice before Laurie in this situation was not, to continue with the lesson or not, it was to continue with the lesson or to turn it in a more personal direction. Laurie had two clear choices, one which carried more risk but the opportunity for deeper learning. Her reasons for making this choice appeared to be related to the principles which guided her teaching. This shall be examined further in subsequent sections.

Not all choices made during lessons were of the complexity described in the vignette above, however. On several occasions, choices were of the kind described by Shavelson (1983); to continue or not continue with a single course of action. These choices appeared to differ from the situation above in that there was an absence of heart thinking evident. Instead, these situations seemed more related to procedural issues in the classroom. In these cases, Laurie's inflight thinking indicated a tendency to allow the present course of action to continue. "Even though I'm concerned, I don't want to change my mind because it's going to cause confusion and I've already created some confusion with the 'cause and effect' issue," she thought as she observed students struggling to understand an instruction during the first lesson. Here she justifies the choice to continue by noting the possibility of interfering with student learning.

Uncertainty noted in the vignette above was, however, a feature of Laurie's inflight thought which seemed to be related to the making of choices. Choosing to continue or not to continue with one course of action may have been one choice but to

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choose alternative courses of action meant that those alternative choices must be first identified. In her inflight thoughts Laurie frequently seemed to be searching for alternatives, posing questions for herself such as "how am I going to turn this around?", "what am I going to say?", "how do I address this?", and, "how can I communicate this?" While sometimes this search for alternatives was successful and Laurie engaged in a new course of action, the search was at other times concluded by a choice to let the current course of action continue: "I don't know how to get out of this, I'll let it slide."

Lesson flow. Choosing to let a matter slide is related to Laurie's awareness of the flow of the lesson and the time available for learning. Laurie's inflight thoughts reflected an awareness of the passing of time within the lesson: "the time factor," "There is limited time left"; and within the school term: "Time is really an essence here . . . I have to have the whole course finished by the beginning of June." In other thoughts there was a sense that the allotted time was something which "belonged" to Laurie. As a student interrupted her explanation to the class, Laurie thought, "Time, you're taking away time from me!", as if time were something she owned. Later, as Laurie unhappily observed an activity going awry, her inflight thought, "time's now my friend because it's almost the class end," revealed again this sense of time as an aspect of teaching with the potential to work either for or against the teacher. Despite these observations, it can not be said that awareness of time was a particularly significant feature of Laurie's inflight thought.

Lesson content. Deliberate consideration of formal lesson content was not a feature of Laurie's inflight thought. Formal lesson content may be defined in this context as that body of knowledge or cluster of skills which, at the commencement of the lesson, the teacher wished the students to learn. At the beginning of one lesson she thought: "I'm really into the topic . . ." and shortly afterwards, " the comparison between Brazil and Canada, can the kids make that comparison?" The former thought could be interpreted as relating directly to the formal lesson content but without articulation of that content; her use of the phrase, "the topic," appeared to be a generic way of referring to lesson content. The latter thought, while making more explicit reference to the lesson content, was more related to student learning of the concept. Hence, rather than thinking about particular aspects of Brazil or the details being presented to the class, Laurie tended to think more generally about the topic. This is not to suggest that Laurie did not think about the formal content of the lesson at all. Another interpretation, supported by other studies of teacher

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thinking (Marland, 1986; Marland & Osborne, 1990), would be that Laurie knew this material very well and that her understanding of the material was automated and not, therefore, available for verbal recall.

Consideration of student understanding of formal lesson content was a feature of her inflight thought. Thoughts such as, "This is not coming through" and "I don't think everybody might have understood what that term means," seemed to indicate that she was comparing the current level of student understanding to the required level of understanding of formal lesson content. Reference has already been made to this monitoring in terms of a specific teaching technique.

Although Laurie's inflight thoughts revealed almost a complete absence of reference to formal lesson content, content of the lesson which arose incidentally was a feature of inflight thought. It is significant in this context to note the explicit reference to lesson content which took place in the second lesson. In this lesson, formal content included the way in which individuals deal with grief. Initially, Laurie's inflight thoughts indicated little explicit reference to the formal content of the lesson. As in the first lesson, reference to the topic seemed to be of a generic nature: "OK, let's read the story, assign the assignment, discuss the learnings from the story and be ... that be it." Indeed, Laurie's consideration of lesson content appeared to relate more with what would not be included, "they're not to absorb my shit," than what would. As the lesson developed and she became aware of the parallels between the example in the story and her own situation, however, reference to the lesson content became increasingly explicit: "We often absorb other people's pains or problems," and "How can I communicate that there are times when people don't know and can't communicate but often an outsider can see more than the person involved ...?" Although the content of the lesson did not change, the use of certain more personal examples and the choice to involve herself more personally in the discussion seemed to coincide with more explicit reference to that lesson content. In common with the first lesson, however, Laurie's inflight thinking reveals constant reference to the level of student understanding of the lesson content: "I'm impressed and rejoicing in their intuitiveness."

Purpose. Related to Laurie's thinking about the content of the lesson was her inflight thinking about lesson purpose At the beginning of the first lesson, there were inflight thoughts in which she restated for herself the purpose of a section of the lesson: "purpose of this information was to give meaning to the statistics, bring statistics to life."

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Although this was the only direct references to purpose, statements which implied purpose were a feature of Laurie's inflight thought. Throughout lessons, she indicated that she wanted students to give information, to hear what she was saying and to be aware of an aspect of people's behaviour. For herself, she wanted to get assignment work started, to achieve a new task and to close a section of the lesson. Thoughts beginning with "I have to ..." were not uncommon. These related to the flow of the lesson: "I have to move on," and to a range of teaching activities: "I have to role model that," "I have to do something to fix this up," and, "I have to bring meaning to all of this."

Implicit in the use of both "I want to ..." and the stronger, "I have to ...," was the notion of some principles guiding and almost compelling Laurie to think and act in certain ways. Detailed articulation of such principles would not be expected to occur in inflight thoughts since these principles, operating at an automated level, would not be available for recall during the lesson. Nevertheless it is clear, from the variety of issues which she felt compelled to address, that more than one guiding principle was in operation. The nature of these guiding principles may be recognised in the characteristics of Laurie's inflight thought examined in this chapter.

Summary of Characteristics

In the preceding sections, the nature of Laurie's inflight thinking has been described and explored in terms of three main characteristics which emerge from that thinking: Heart thinking, "you guys!", and lesson thinking. Certain features of Laurie's inflight thinking which define each of these characteristics have been identified and the way in which the three characteristics overlap and interact with each other has been examined.

In the course of this examination, it has been observed that certain principles appeared to flow through Laurie's inflight thought. In the section that follows, possible relationships between the guiding principles identified earlier in this chapter, and Laurie's inflight thought, shall be analyzed.

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Relationships between Guiding Principles and Inflight Thinking

In this section I shall examine relationships between guiding principles and characteristics of inflight thinking. Included in this examination shall be final analysis of Laurie's understandings of learning and teaching.

In earlier interviews, guiding principles were described by Laurie and could be recognised by the researcher. In Laurie's inflight thinking, these principles were sometimes referred to in an explicit manner but more commonly implied. The way in which these guiding principles related to one another in some form of coherent whole was, though, unclear to the researcher at this stage. It may have been that there was no particular connection between these principles. However, during examination of Laurie's inflight thinking, interconnections and relationships began to emerge allowing apparent inconsistencies to be resolved and apparently rudimentary principles to be more fully explained. These relationships emerged as themes and are discussed in the following section in this thematic form.

The following examination of the relationship between inflight thinking and guiding principles, therefore, led to a better understanding of the 'inner' Laurie than could either inflight thinking or guiding principles alone. Four themes emerged, which seemed to summarize these relationships: a) Developing the inner child, b) sense of identity, c) safety and risk, and d) honesty and awareness.

Developing the Inner Child

Laurie identified development of the inner child as being the key to personal success. Her description of the inner child or the person inside related specifically to human characteristics such as emotions, self-concept, and motivation. Attention to these characteristics was seen by Laurie to be the means by which greater resourcefulness, autonomy, and personal success might be achieved. This attention to affect was characteristic of Laurie's inflight thinking and has been defined as "heart thinking."

"Building the inner child" suggested explicit and purposeful reference to student emotions and self-concept. This could be seen when Laurie considered the impact of student comments on the emotions of other students, when she chose to provide feedback for students about their impact on her own emotional state, and when she attempted to limit the effect of her own mood on that of the class. More commonly, however,

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building the inner child as a guiding principle seemed to permeate Laurie's inflight thought at a less deliberate level. One of the most striking characteristics of her thought was the unmistakable presence of heart thinking. For Laurie, the inner person had been equated with the way people feel about themselves and, by extension, the way they "feel" more generally. Inflight thoughts which included this feeling and emotional aspect were evident throughout both lessons. While Laurie did not use the term, inner child, in her inflight thinking, awareness of affect, emotion, self concept, and feelings, appeared to be a fundamental aspect of Laurie's thought.

Sense of Identity

In earlier interviews, Laurie noted the importance of developing a sense of individual identity which could be used to build the inner child. Although the term "identity" was not used in her inflight thought, awareness of a sense of identity was an implied feature of Laurie's inflight thinking and one closely related to awareness of student emotion and self-concept.

It was clear that, for Laurie, each student had an individual identity, of which she was well aware. She acknowledged that awareness of individuality was a guiding principle and, in her inflight thought, this awareness of each student as an individual was evident. Inflight thoughts described above within the characterization of "you guys!" contained frequent acknowledgement of student strengths and individual identity. It was less clear, however, whether her own awareness as teacher was shared by the students themselves. Laurie even hinted at this herself when, as she watched a student, she wondered, "Do you have any idea how good you are in this area?" Following this question she noted to herself, "You know, I've gotta tell these guys about their strengths somehow," but subsequent inflight thoughts did not include a deliberate attempt to pass on this awareness of strengths to the student. This would appear to be a significant issue considering Laurie's stated intention as a teacher to facilitate the development, within each student, of this sense of individual identity. A possible explanation of this apparent omission may be that once having recognised an individual's strengths or other aspects of an individual's identity, efforts to develop this identity would then be evident in her observable actions, not her inflight thoughts.

It is interesting to note that whereas the notion of group identity was only suggested in previous interviews in relation to grade eight's sense of belonging, it

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operated consistently throughout Laurie's inflight thinking. Reference to the class as having a collective identity was characterised by her use of the term, "you guys!" Sense of identity appeared to be a more pervasive principle than Laurie may have acknowledged.

Analysis of Laurie's inflight thinking suggested an understanding that one way in which a sense of individual identity may be developed and personal growth occur was through the taking of risks or chances. Taking a risk or chance involved a degree of commitment, some conscious attention to the act about to be performed, and a willingness to accept both favourable and unfavourable reaction to a personal characteristic. Reactions of other people to the risk taken was perceived to provide feedback to individuals and serve to hold a mirror in which they can see themselves. If the reaction to a conscious act was encouraging, the individual would be able to acknowledge that action/belief/opinion as a feature of their personal identity. If the reaction was discouraging, the individual might choose to accept that their opinion was not that of others, but still a feature of their personal identity. Alternatively, the reaction of others, encouraging or discouraging, might result in some deliberate effort by individuals to shape their own identity.

Safety and Risk

A guiding principle noted in semi-structured interviews was the importance of establishing a safe environment. An environment in which students were safe from physical harm may be assumed in this statement. More specifically, however, Laurie was referring to the creation of an environment in which students felt psychologically safe, a place where their self-concept and emotions would not be harmed. While the role of the teacher was to establish the safe environment, this was done in order to develop students' willingness to take risks. These two related issues: a safe environment, and taking risks, both emerged in Laurie's inflight thinking. Thoughts about the creation of a safe environment were features of heart thinking, particularly as it related to thinking about Laurie's own feelings and emotions.

During the lessons, the importance of this psychological safety was explicitly acknowledged both for herself and for the students. In an example of her own risk-taking, this connection between safe environment and risk was particularly evident.

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This occurred as she prepared to take a risk herself and then, subsequently, as she engaged in the taking of that risk.

Omission of reference to the making of choices as a guiding principle initially appeared inconsistent, since that principle occurred frequently during Laurie's inflight thinking. Subsequent consideration, however, suggested that a connection had been made by Laurie between choice and the taking of risks. This connection appeared to be an understanding that people make choices to act in ways which may be more or less risky. Actions in this context include things said as well as physical actions. The degree to which actions are risky may only be perceived by the person carrying out that action. To the observer, in other words, something that a person says may not seem to be particularly risky while to the speaker it may.

People cannot usually be forced to act in ways that are inherently risky to them, they must choose to do so. It follows that if a teacher believes the taking of risks to be a worthwhile learning experience, the most that that teacher can do is to create an environment in which students will choose to take risks. Such an environment may be described as one which is perceived by the students to be safe.

Laurie's understanding of a safe environment seemed to be that it was an environment in which individuals felt sufficiently relaxed to be willing to act in ways which may attract negative feedback. Typically, it would be expected that these actions would involve presenting, for outside scrutiny, something which had previously been kept private: an opinion or personal conviction. The nature of the feedback, however, is more complex than simply positive or negative. In a safe environment, an individual might accept a greater degree of negative feedback because the feedback was perceived as being constructive or delivered with favourable intent. In a less safe environment, an individual might choose not to engage in acts likely to attract either positive or negative feedback, if it were anticipated that the intent of that feedback was not favourable.

The teacher's role, accordingly, would be to ensure that the intent of any feedback was seen to be favourable. More specifically, the teacher would have to assume that all student actions involved a degree of risk to the student and respond accordingly; by acknowledging the act and giving credit for that act. An implication of this would be that, if the teacher responded in this fashion and the act involved no risk, then no harm would have been done and the student would have been made aware of the likely response from the teacher if at some later time they *did* engage in a risky act. If, on the other hand, the

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teacher assumed that student action involved no risk and failed to acknowledge the act, it would be unlikely that the student would engage in further risky activity.

Related to this was the issue of classroom climate and the presence of unspoken codes of behaviour. If, for example, the climate of the classroom was generally critical and there was an unspoken code within which it was not acceptable for a student to volunteer an opinion, then that environment could not be described as being safe for the student who wishes to venture an opinion. Further, an environment in which rules and expectations are not made clear and where there appear to be erratic or unpredictable responses from the teacher, could not be described as being psychologically safe. In addition to treating all student responses with respect and consideration, a teacher must also be explicit about her own expectations and the rules of the classroom. Finally, she must either be consistent in her responses to students, or be honest in explaining any inconsistency.

Only by Laurie considering her own actions was explicit connection made between a safe environment and risk taking. Following from the observations above this should not be seen as particularly surprising since she was the only person able to perceive that the course of action being contemplated was, for her, risky. If the environment had not been sufficiently safe, Laurie would not have been willing to take this risk. In inflight thoughts relating to the students, however, Laurie seemed to be reminding herself that all acts should be considered to be risky for the student and that the safest environment would be one in which students would be prepared to engage in any act. On a pragmatic level, it must be noted, however, that safety is a relative concept and that while a teacher might endeavour to create a safe environment in the classroom there are features of classrooms and of schools which mean that there will not be unqualified support for every student action.

Honesty and Awareness

A final principle but one embodied in principles of inner child, safety and risk and sense of identity, was honesty and awareness. For Laurie, honesty and awareness appeared to function as active and passive aspects of the same concept. Awareness implied conscious recognition of the actions and feelings of others. Honesty implied a deliberate articulation of feelings in order that others might not misinterpret an individual's actions. Both of these aspects could be seen to be closely related to the

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creation of a safe environment. Laurie, reflecting on the need to tell her class about her current mood, assuring them that they were not to blame, was a clear example of an inflight thought for which honesty was a motivating factor. It appeared, however, that rather than simply demonstrating the concept of honesty, Laurie was being guided by her confidence in the need to create a safe environment and by her confidence that, by being honest herself, she was minimising feelings of tension and uncertainty in the classroom.

Similarly, by being aware of the students at an observable and at a heart level, Laurie seemed to be constantly evaluating the extent to which the students perceived the classroom environment as safe. Clearly Laurie was aware of the activities in the room for purposes other than psychological safety. She was aware of the flow of the lesson, of the interruptions, of the degree to which concepts were being learned. She was also aware of her own emotions and the impact that these had on the students. Awareness of these issues allowed her to make choices where necessary and to build on her understanding of the classroom dynamics. Awareness was undoubtedly one of the defining features of Laurie's inflight thought. This helps to explain much of Laurie's apparent ability to make sense of a complex situation: she was aware of the elements operating within that situation.

It may be that Laurie's general awareness could be seen to explain the absence of the inclusion is a network principle from her inflight thought. A feature of this principle was the operation of support structures outside the classroom, yet events outside the classroom were rarely thought about. There were no inflight thoughts relating to Laurie's activities outside the classroom and student activities outside the classroom were only alluded to once as a possible explanation for their unsettled behaviour. It could be inferred from Laurie's thinking, however, that her awareness of herself and her own limitations would cause her to seek this external support in situations where she became aware of student need. Her willingness to do this was implied in an earlier statement when she noted that, "I can't do it all," and that, for development of autonomy, students need to move beyond dependence on one teacher begin to seek their own solutions.

Chapter Summary

In this chapter, a case study has been presented of a teacher who teaches in the context of an inclusive classroom in a secondary school. Laurie's voice was heard as she introduced herself and described how she came to be teaching in that context. What it

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meant for her to be teaching in that situation was explained, and her guiding principles about inclusive education and teaching in general were described.

The researcher's observations of the teaching context were then presented, including description of the class and of the two lessons which were the subject of stimulated recall interviews.

The nature of Laurie's inflight thinking was described and explored. Three main characteristics were identified, these were labelled heart thinking, "you guys!", and lesson thinking. It was recognised that much of Laurie's inflight thinking takes place at an emotional or affective level. Characteristic of her inflight thinking was her appreciation of student identity, both individually and collectively. Features of Laurie's lesson thinking included her willingness to take risks and an awareness of different elements operating in the classroom.

Finally, relationships between Laurie's guiding principles and her inflight thinking were explored and a revised and more detailed insight into her understandings of teaching and learning was obtained. Ways in which a teacher could create a safe environment in which students would be prepared to take risks was one aspect of Laurie's thinking which emerged from this analysis.

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CHAPTER FIVE

Case Study Two - Denise

This chapter, second in the series of case studies, follows the same format as the preceding chapter. Once again, the case study is divided into four main sections: An examination of the participating teacher, information about the context in which she is teaching, description and analysis of the teacher's inflight thinking, and an exploration of relationships between the teacher's guiding principles and inflight thinking.

The focus of this case study is the participant known as Denise. In contrast with Laurie, the participant featured in the preceding chapter, Denise is a teacher of English in a high school in New South Wales (NSW), Australia. She is a teacher in the latter half of her teaching career who displayed an enjoyment of teaching which, she acknowledged, was greater now than at any other time in her career.

The Teacher

In the section that follows, Denise introduces herself and provides some insights into her life and her teaching. The words used in this section are those of Denise, compiled from transcripts of semistructured interviews or from researcher fieldnotes.

Focussed Life History

> A personal profile. My name is Denise, I teach English in grades seven to twelve, a class in every year. I've been here since 1979 but this is the longest I've ever been in a school, I'd never been any more than three years anywhere else.
>
> I can't remember why I started off as a high school English teacher. I just didn't want to be a primary teacher. I went into teaching really because that was what you did, you either became a nurse, a secretary, or a teacher. I didn't want to be a nurse and I thought a secretary was a bit "down market," so I thought I'd be a teacher, but I was quite convinced I did not want to be a primary teacher. I was hopeless at maths and science so it didn't leave much else. It was sort of by

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default, I guess. I did like English at school so that was the reason I thought I would like to teach English.

But I didn't take to it easily. I didn't much enjoy teaching at first because you were thrown into it very much in the deep end. I left school at the end of November and the following April I was in a classroom practice teaching with a very nasty supervisor. He was very critical of everything that you did and they used to come every day and they were always there breathing down your neck, so it was a fairly terrifying beginning. I almost thought of throwing it in at one stage but I thought, oh, that was defeat. And I had my scholarship anyway so I kept on giving it a go.

I only did two years of training so I went out teaching when I was nineteen. I started in central schools[1] in the country, very small places. You had to do three years "country service" then. I was trained as an English/History teacher but I virtually taught everything because you came and you were new and they just foisted everything on you. In those early days I taught a lot of what were called the GAs[2] and you taught GAs everything, you were the GA teacher, basically and that was pretty horrific.

Then I was at another country school for two years, it was lovely. And then I went to a school in the city. I didn't enjoy teaching there at all, it was a very peculiar kind of school. We had basically the "drop out" kind of kids whose parents maybe had wanted them to go to the private schools or had sent them and the kids didn't like that sort of strict discipline. I was only there for a couple of terms and I went overseas then for a year.

When I came back I went to a girl's high school in the city and from there to a large high school in a large coastal city. I taught some senior high when I was there. I found it very difficult because they too had the philosophy that you were a teacher, you taught everything. I had not had any experience of senior

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1 Central schools. Schools located in smaller population centres providing education facilities for elementary and secondary aged students on the one site.

2 General Activity students (GA). A categorisation not currently in use but which referred to students having a mild to moderate intellectual disability.

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students and suddenly I found myself teaching year twelve modern history and I'd done two years at teacher's college but that was all: I was sort of a page ahead of them in the text book. So I found it very difficult suddenly to be thrown into that. I came out of that year feeling inadequate and I've never liked teaching history ever since. I've moved further and further away from teaching history so I only teach English now, which I very much prefer anyway. And from that high school to here.

When I started teaching I was a junior secondary teacher, because if you only had two years training you were considered ... you weren't really equipped to teach big kids. So for a long time I did that. I tried doing university by correspondence but when you're way out west that's really hard. Then, ten years on, I decided I'd do a conversion to three year trained status. I was married by that stage and had gone back to live in that large coastal city. I was near the CAE[3] so I did my conversion externally. I started it and then we moved and I finished it here. I can remember I was in hospital having my first child and studying.

After that I thought "Oh, yeah, I've got my three years up ..." and I just jogged along on that. I didn't mind teaching in the junior school. Then the new Head of Department came. He didn't believe in the old idea that you're only three year trained you could only teach in the junior school. I was then teaching year eleven and year twelve and he said to me one day, "You're mad, you know. You're doing everything we do but you get a heck of lot less money for it. Why don't you do your degree?" So I thought about it for a while and decided I'd do my Bachelor of Education by external study. I worked very hard, you know, I did a lot of units. And it took me only two years to do that. So that was another ten years on, it was a sort of journey in ten year slabs.

That course was great, I felt that it was an important turning point for me. I felt much more confident as a teacher, even though I'd already been teaching for some time. I discovered that a lot of things I was doing were what the research said was right and so it made me feel more confident. It made me re-assess and

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3 College of Advanced Education (CAE). Institutions previously known as Teacher's Colleges became Colleges of Advanced Education in the early 1970s.

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re-evaluate but it did not change my practice enormously. But I felt I was working from a sounder base, I suppose. I knew more and I'd done a lot more professional reading so I thought it was very beneficial. It was darned hard work, it required a great deal of self-discipline but it was a very rewarding experience and I don't regret having given up the time at all. The information's blurred now, I probably need to do something else because it's coming up to another ten years!

I've been particularly happy in these last few years at Anzac High. I wasn't happy when I first came here, the first couple of terms I was pretty miserable. I think my low points predominantly have come when I've changed schools and first started off. And I probably wasn't particularly happy while we still had the graded classes. But, you know, the last few years have been a particular high point. I've particularly enjoyed teaching and I think that's surprising, because I'm looking towards retiring in a few years. By now a lot of people are not enjoying it any more but I probably enjoy it more now than I ever have.

Teaching information. I've been asked to explain what I do as I teach 9D. We follow a modified version of a system called LiToWL - - Literature to Whole Language. We follow a contract system and the kids do most of their own choosing; they choose all their own books to read, their own topics to write about, their topics for oral presentations and so on. So there's a lot of choice for kids. It's a very structured kind of choice but they do a lot of choosing and we think it works very well. There is a lot of repetition in it but the kids respond very well. They come in and they've got a timetable within a timetable and so you don't get kids coming through and saying, "What are we doing today?" daily, 'cause it's up. And they can plan, they can say, "Well, I know she's not going to talk for the whole lesson today."

We start off with the focus section of the lesson which is about ten minutes of directed teaching. Now that focus time can take the form of specific instruction or it might be showing them a model and talking them through that. In that focus session I'd try and indicate to them what their goals should be or what they should be choosing among things for that lesson.

Then we move into the next section of the lesson, which could be work time, when they are free to discuss their work or come out and talk to me.

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There's a lot of one to one work done in work time or maybe in pairs or groups if they're conferencing. So focus is where it's whole class. Work time is where a lot of them will come out, either I'll call them out to monitor their work, or they'll want to show me something they're working on.

Then we have the final phase of the lesson, which would usually either be SSW, which is silent writing time, or silent reading time, or it could be what we call sharing, which is an oral presentation. If they're reading I try and read, because of the modelling effect. In SSW time, ideally I would like to write too, as a model, but in practical terms there's not enough time. So sometimes in SSW I'll be writing, but actually doing housekeeping type writing, rather than creative writing or journal writing, which is what they're doing. And in sharing, if they're doing the oral presentation as well, I'll be at the back giving feedback and commenting on what they've done. So that's basically what happens.

When you're giving instructions you have to give them in a variety of ways because, in the inclusive class, the students learn in a wider range of manners. You can't depend so much upon just what you tell them because so many of them have poor listening skills and they don't remember terribly well, their vocabulary is limited, and so you've got to give a wider variety of ways of instructions. When we do a focus and I explain something, then I might give out a model. You also know that, even after that, you will have to ensure that some of the people have actually taken it in, maybe go and question them.

They pick a lot of their own material in the system we use, but when we are teaching you have to pick material which will be challenging enough for the brighter ones and yet present it in a way that the weaker ones will understand as well. For example, we'll do a Shakespearian comedy, and they will all do similar work on it but there'll be more choice of things that you can do within the work.

If there's a difficult task you encourage the better ones to do that, and if the weaker ones are heading towards that and you know it's going to be just too difficult for them, then you kind of steer them towards something that they can cope with and have success in. But the thing is that the kids tend to rise. If they said, "No, I really want to do this," well, you give them all the help that you can with that particular task.

Sometimes you get the occasional lazy kid who'll always take the soft option, and you really have to take them aside and we work on developing this

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sense of responsibility, that you must challenge yourself by picking continually harder books and by picking more difficult writing genres.

But, in general, they won't choose things which are of a type of work that they find they're uncomfortable with. If it's an essay, and they're not comfortable with essay writing, they wouldn't choose that. So you would never stop kids from doing something if they were really keen to do it.

One of the problems that can develop is that if they're all expected to do the same task, how do you grade it? Because if you actually give them numerical marks, some of the kids in that inclusive class are always going to come out at the bottom. So we don't have any numerical system, we only use comments and suggestions. We are constantly telling the kids that they are competing with themselves, they're not competing with each other. I think it makes them feel much more relaxed.

Student A's quality might be quite different from student D's quality, but if it's quality from him it's worthwhile celebrating that. We'll all pick different books; some people will be reading books that are really hard and challenging, other people will be reading books that are much shorter and simpler. But the question is, "Is it a book that's challenging you?" and if it's challenging you, it's the right book for you.

Occasionally you do get kids who push for marks but after a while they get used to the system and they really like it. As long as you give them quite reasonable feedback. Every time I pass work back I try and pick something, a couple that are worthwhile to read [out loud]. And I don't pick the bright kids all the time, because sometimes weaker kids produce some very good work.

Guiding Principles

Denise is a neat and cheerful teacher with many years of professional experience. She has an air of quiet confidence and enthusiasm for teaching and learning.

Throughout our discussion, Denise referred to the approach to teaching English which she and the rest of the English Department had been implementing for the past five years. She explained how the way that English was taught at the school was annually reviewed by all members of the Department and modified as necessary. It became clear that Denise enjoyed an effective professional relationship with her colleagues, and that

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that relationship was important to her: "I think that having good colleagues and a good relationship with your colleagues is just crucial. I think that's what makes or breaks the teaching experience."

Having heard her provide some biographical information and describe some details of the experience of teaching, the case study now turns to some exploration of the principles which appeared to guide Denise's teaching. These principles were derived from the transcripts of semistructured interviews.

About teaching in general. In semistructured interviews, Denise described several principles which guided her teaching. One of these, to which Denise frequently referred, was the principle that the role of the teacher is to facilitate student learning. The act of teaching should not be understood to necessarily lead to student learning. She described how previously teachers taught the students, "and incidentally they learnt," but that she is now conscious that "they've got to do the learning and you have to help them with their learning." There has, therefore, been a shift in the role of the teacher: "The emphasis has changed from being a teacher to being a facilitator. Now we let them learn. When I first started out we taught them. Nobody had really said anything about learning, it was all teaching." In Denise's opinion, this represented a dramatic shift, but one which had been very beneficial for students.

Implicit in this principle were understandings of the roles of both teacher and student. In addition to the teacher's role now being less that of a director and more of a facilitator, the role of the student has changed increasingly to the student as self-director. Taking an increased role in direction of own learning has also meant an understanding of the student as an active participant in the learning process. Other guiding principles relating to student learning described in semistructured interviews seemed to follow from Denise's understanding of these new roles.

One of these guiding principles related to understandings of student as learner was being conscious of student individuality. Rather than considering the class as a relatively homogeneous group, Denise explained how she believed that current practices in the teaching of English at Anzac High catered better for individual students; allowing freedom to choose and reducing the opportunity for comparisons between students. Further, she asserted that, "Getting to know the kids is important. Once you know the kids as individuals it's so much easier." Consciousness of student individuality, then, appeared to have implications for student learning and for the relative ease of teaching.

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Denise recounted a recent experience with a student which, for her, illustrated this principle. A student was in a class which she was teaching, who could have been described within a number of different categories: Aboriginality, learning difficulties and social skills problems. It was clear to Denise that this student required individual attention which was not necessarily associated with any one of those categories: "I think that's the essence of the whole thing. They've all got special needs but they're all different." For Denise, it appeared that describing a student within any general classification such as age, gender, ability, or background, failed to acknowledge that student's individuality.

This consciousness of individuality could also be seen in the way that Denise approached the teaching of a class. In terms of her teaching, she explained that, "It's making sure that they're all getting the right kind of instruction." She acknowledged that, in her selection of material and in the way she "pitched" the lesson, she was aware of individuals and their needs; picking material within which there was scope for instruction at appropriate levels for all students. In Denise's view, however, student selection of their own material did not replace the need for the teacher to encourage, according to her own perception of their ability: "If there's a difficult task you encourage the better ones to do that," she explained, "and if the weaker ones are heading towards that and you know it's going to be just too difficult for them, then you kind of steer them towards something that they can cope with and have success in." Finally, the principle of being conscious of student individuality could be seen in Denise's explanation of her willingness to give special consideration and make allowances for individual students: "If you get a messy sort of kid who's having a lot of problems of a particular type and s/he hasn't got work to pass in, sometimes you can make allowances for that." She conceded that this was sometimes an area of considerable difficulty in a classroom environment: "It's trying to make the kids understand that whilst we have ground rules we follow, that sometimes those ground rules have to be bent a bit for some kids."

Related to an awareness of individual differences was the principle of encouraging individuals to challenge themselves. Rather than relying on predetermined standards which students were expected to achieve, Denise's teaching appeared to be guided by a desire for students to continually challenge themselves. Denise acknowledged, in her discussion of systems of assessment, that it was very difficult, in a heterogenous class, for one standard to be set which would be reasonable for all students. Instead, the principle of individual challenge meant that students were setting their own standards

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which would be continually adjusted according to individual progress: "You've got to challenge yourself. You can take the soft options all the way through for four years and you will have reached this sort of level. And everybody else will be way ahead of you." Implicit in this comment was the suggestion that the benefit of setting individual challenges could be seen in terms of personal growth but also in terms of development compared to others. While the focus of this statement is on the notion of personal challenge, "competing against yourself," it could be interpreted as sending mixed messages about progress compared to individual standards and progress compared to others. Nevertheless, Denise seemed to be suggesting that, in the context of the educational system in which this class is operating, some reference to the progress of peers was appropriate.

Denise explained that she felt this principle was effective for students irrespective of ability, noting that students sometimes chose to attempt a task which was apparently beyond their ability. Denise presented two possible explanations for this phenomenon: "They would go for more challenging things because often they don't want to be thought to be weak students, and the challenging things are sometimes more interesting for them to be working on, so they get more involved in that." Denise explained that although she would initially try to guide students towards tasks of what she perceived to be an appropriate level of difficulty, she would not prevent students who chose to undertake a more difficult challenge. She justified this by making the general observation that the outcome may sometimes be unanticipated by the teacher: "The thing is that the kids tend to rise."

Developing a sense of responsibility was another principle which appeared to guide Denise's teaching. This could be seen to be related to the principle described earlier of facilitating student learning. Implicit in the idea of students being actively involved in their own learning is the taking of some responsibility for that learning. For Denise, it appeared that an important way that this principle could be illustrated, was through the making of individual choices, choices such as those discussed earlier; undertaking difficult challenges. It appeared that the provision of opportunities to engage in choice-making of this nature was guided by a principle of increasing students' sense of responsibility.

In Denise's description of her teaching, the provision of a structure within which individual choices could be made was a deliberate act designed to increase engagement in the learning process. While she explained that, "the kids do most of their own choosing.

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They choose all their own books to read, they choose all their own topics to write about," it could be seen that the parameters within which these choices could be made were established by the teacher. Developing students' sense of responsibility was not understood to involve a consequent giving up of teacher responsibility; there was not an unlimited freedom within the class but a structured system within which certain choices could be made. A balance had been established, it appeared, between teacher direction and students' freedom to exercise choice and take responsibility.

By giving to the students responsibilities that may have been considered to be those of the teacher, Denise was sending a message to those students that she considered them capable of taking such responsibilities. It could be anticipated that this would have implications for students' beliefs about their own abilities and that as a consequence of this, some more effective learning may take place.

Closely related to Denise's guiding principle of being conscious of student individuality was another principle, keeping in touch with each student. This principle involved a deliberate effort on the part of the teacher to make some personal contact with individual students; to make students aware that she was conscious of them. It went beyond a passive monitoring of students since Denise referred specifically to, "trying particularly to reach each kid each lesson." In explaining her identification of this as a guiding principle, Denise observed that some students experience very little deliberate personal interaction with a teacher: "I think kids might go through a whole day, if they're a certain type of kid, and no teacher might actually interact with them, in one to one." Implicit in this observation was an understanding that this was not a desirable situation for students and that personal contact between student and teacher was an important aspect of schooling.

Denise described how her teaching practice was guided by this principle as she tried to have contact with as many different students as possible during the course of a lesson: "Even if it's only just a quick exchange at the beginning of the lesson, or having them come out the front, or saying, 'What are you doing at the moment?', so that you don't let people just slip by." Because of this reference to the making of contact with individual students, it could be inferred that the class, for Denise, was not a single entity but a group of students with individual personalities, characteristics and needs. Relating to the class as individuals meant, "keeping your finger on all the pulses."

Although Denise's conception of the class was as a group of individuals, she commented on situations where the actions of some individuals within that group

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impacted, in a more generalised way, on relations between other students and the teacher: "When you've got difficult kids in the classroom they just undermine the learning environment for everybody because the teacher's constantly on guard and so these kids prevent you from relating properly to many of the others in the room." It was clear in this statement that Denise perceived a direct link between proper relationships between the teacher and individual students, and effective learning.

She acknowledged, however, that a bidirectional relationship operated in these situations: "It works both ways because, when they're more pleasant, then you can be more yourself. And you haven't got to put up that barrier and you're not getting angry with people, and making other kids feel on edge." An implication of this was that in situations where she was able to be herself, she was able to a more effective teacher, establishing relationships and interacting more effectively with individual students. Consciousness of individuality appeared to extend beyond the characteristics of the students to include characteristics of herself as a teacher and an individual in the classroom.

About inclusive education. Although Denise was able to clearly articulate her own understanding of the meaning of inclusion and how it was being implemented, it was more difficult to identify specific principles which guided her instruction in inclusive classroom situations.This difficulty suggests that,for Denise, the principles she identified as guiding her teaching apply across all teaching situations and that no distinction should be made between instruction in inclusive and non-inclusive settings.

Denise defined an inclusive classroom as being one in which, "where all students, your whole cross section, all the kids we've got in Year Nine at Anzac High, would be in that class, that there's nobody weeded out." She described the school's inclusive education procedures in terms of the way that upon enrollment, students would be placed in any class, where space was available:

> If a new student came to Anzac High they would just be put into one of the classes where there was a space. They wouldn't say, "Are you a bright person? Are you Aboriginal? Are you slightly hearing impaired?" . .. None of those considerations. If my class was the smallest class, they would go into that class.

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Inclusion, then, means that individual characteristics are not a consideration when students within the same age cohort are assigned to classes. Significantly, Denise articulated a perception of individual rights which seemed to underpin her understanding of inclusive education: "Everybody has the right to be in a group that is not graded or chosen in any particular way."

An inclusive approach to education, she asserted, has particular benefits for students:

> They learn so much more. In school, kids don't only learn what the teacher's teaching, obviously. And so their educational experience is so much more superior than in a non-inclusive situation. It's education, whereas the other's a rarefied atmosphere that you're creating all the time.

She went on to explain that, "the kids learn to accept so many other different people. It breaks down so many barriers that develop otherwise. You know, in the playground, everywhere, kids just get used to rubbing shoulders with all sorts of kids."

As mentioned earlier, there appeared to be no guiding principles which could be said to be related particularly to teaching in inclusive classrooms. In relation to some of the principles, however, there did appear to be some greater emphasis when considering inclusion and its implications for teaching. Denise's consciousness of student individuality, for example, appeared to be heightened in an inclusive class.

Denise explained her understanding of the differing needs of individual students and the instructional implications of this by referring to graded classes where differences may not be considered. In these classes, she explained:

> You do tend to think that they're all pretty much the same and they'll all respond similarly to certain information, or that they will be able to understand the same kinds of instructions, and so you do tend to teach more to a group rather than focussing on individuals.

Referring to differences in instructional approaches for graded and ungraded classes she went on to acknowledge that "I think that those differences perhaps shouldn't exist. Because even in a graded class, you've got a wide range of students."

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Keeping in touch with each student was a principle which also appeared to have special significance for Denise in the context of an inclusive classroom. While acknowledging the importance of providing attention to all students, she explained how more attention may be given to some students, "because unless you attend to them they're going to be disruptive to the rest of the class," but that the danger of this was that students who also have special needs but who may be more quiet, could be overlooked. Denise commented that "all their needs are different" and that, unless the teacher maintains contact with each individual throughout the lesson, these different needs of all students may not be recognised.

Summary

Denise is a teacher who, in the latter half of her professional career, is enjoying her teaching more than at any other stage. As she described her career, she made reference to both high and low points. Low points seemed to be those times when she felt ill-equipped to deal with particular teaching situations, while high points seemed to be those times when she felt that she was learning, contributing to student growth, and experiencing increased personal confidence in her own professional practice.

Denise's description of her own teaching revolved around her implementation of a particular approach to instruction used by the English Department. A major feature of this approach was the extent to which students had freedom to make choices about their own learning within a defined structure. Another feature was the teacher's role as facilitator within that structure.

In semistructured interviews, Denise identified several principles which guided her teaching. It became clear that her current enjoyment of teaching could, at least partly, be attributed to a congruence between the nature of the teaching approach being implemented by the English Department and her own guiding principles. The principle to which she referred most frequently was that the role of the teacher was to facilitate learning. Ways in which learning may be facilitated were suggested in other principles; those of encouraging individual students to challenge themselves and develop a sense of responsibility. Consciousness of student individuality was a guiding principle which seemed to underpin much of Denise's understanding of teaching and learning. The importance for the teacher of keeping in touch with each student was another principle which reflected this understanding.

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Guiding principles involving an awareness of student individuality were characteristic of Denise as a teacher. She appeared to have difficulty identifying principles which she believed guided her teaching in inclusive classrooms. Rather, the principles she identified guided her teaching in all teaching situations, irrespective of particular classifications. Only in relation to the principle of keeping in touch with each student was particular reference made, and even then it appeared that awareness of individuality and a desire to recognise individual needs were foremost in her mind.

The Teaching Context

In the section which follows, the context of Denise's teaching shall be presented. Information relating to teaching context was derived from researcher fieldnotes, written during and immediately after visits to the school.

The School and the Class

Investigation of Denise's inflight thinking took place at Anzac High School, a large secondary school in a regional city in NSW. The school is part of the state government school system. The school occupies a large site and is made up of rambling buildings displaying a variety of architectural styles. Staff rooms according to department are located at different locations throughout the school and, while those departments tend to use classrooms close to their staffroom, teachers do not, in general, have a room that they could call their own.

The classroom in which both of the lessons took place was in an older wing of the school. The room opened off a large corridor. Along the facing side of the room were tall windows. At the front of the room was a chalkboard flanked by two cupboards containing reading material and other resources. A noticeboard covered the back wall of the classroom. Desks were arranged in a three sided arrangement facing the front of the room.

Denise's inflight thinking was examined as she taught her grade nine English class. English, being a core subject, was compulsory for all students. Students had been randomly allocated to the class, hence there was a broad range of ability and personal characteristics evident. One member of this class, Steven, had been identified as having significant learning difficulties and was seeing the school's Support Teacher for intensive

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assistance with academic skills during the week. Although not having been formally identified as requiring special support, Denise nominated another student, Bob, as being one who had difficulties learning and who needed special attention. Another class member, Evelyn, had been identified as particularly talented in English and needing extension in this area. Students in this class were aged between 13 and 15 years and there were more boys than girls in the class.

Personal differences within the class were evident. While some students sat quietly and attended to the teacher, others talked to those sitting near them, made jokes, or attended to things other than the subject of the lesson. One student, Bob, appeared to be the class clown, drawing attention to himself by frequent requests to the teacher and calling out throughout the lesson. Denise described the class as being friendly and, "a very happy combination," a group of students who related well to her as an adult rather than just as a teacher. She explained that they talked to her and made jokes and that there was a generally pleasant atmosphere in the class. My observations during the two lessons supported this description of the class.

The Lessons

As the first lesson began, the class was continuing with an activity which they had been working on in previous lessons. This activity involved them making a poetry anthology. In this lesson, Denise was explaining to the class the function of an introduction to such an anthology. Following her explanation, she passed around some samples of introductions to published poetry anthologies for the students to read and asked the students to identify specific aspects of these introductions. She then recapped concepts addressed in earlier lessons.

Denise then asked students to get out their books and copy the information about introductions to poetry anthologies, which she would write on the chalkboard. She turned to the board and started writing. Having written five points on the chalkboard, Denise walked around the room checking on students' progress. She reminded the class of the different writing activities they could choose to engage in during the imminent Silent Sustained Writing (SSW) time and of the sharing time that would be provided towards the end of the lesson.

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SSW commenced and students worked on individual activities. Denise circulated around the room reminding students of the need for silence and individual work, and assisted students where necessary.

Following SSW was sharing time. During this time, students were called by Denise to the front of the room where they read poems, or other pieces of writing on which they had been working, to the rest of the class. The bell then rang for the end of the period, students packed up and left the room.

The topic of the second videotaped lesson was the short story, a fiction type that had been introduced in previous lessons. At the beginning of the lesson, Denise reminded the class of the sharing time that would come at the end of the lesson. She identified students who would be making presentations during this time, checking that they were prepared and providing some advance notice for students who would be making presentations later in the week.

Next, Denise drew the class' attention to a sheet on which she had summarised the key elements of a short story. She then explained these elements one at a time, making comparisons between a novel and a short story. During this explanation, Denise reminded the students of their own writing, and of the elements which they could incorporate. An explanation of different categories of short stories followed, information which was also on the sheets.

This explanation led to directions about the next activity, in which students were asked to copy into their writing journals some brief headings about features of a short story. Denise turned to the board to write the requirements of this task. After writing this she began circulating around the room as the students were writing. Some students talked to her about other writing tasks in which they were currently engaged.

Although some students were still copying from the board, Denise then began reading the class a short story to illustrate some of the elements which had been discussed. After reading for a short time she stopped and asked the class some questions about the passage, suggesting that they try to visualize the scene being described. She drew their attention to the elements of a short story which were present in the example she had read.

Finally, Denise called on the students identified earlier in the lesson to make their presentations to the class. As the students were coming out Denise reminded the class that it was now sharing time and they were to stop writing. The students made their

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presentation and Denise made some comments about the poem they had read. The bell rang and the students left the room.

Nature Of Denise's Inflight Thinking

Examination of inflight thinking contained in this section was derived from transcripts of stimulated recall interviews. The reader is reminded that, as in other case studies, reference made to Denise's thoughts was actually a reference to Denise's recollection of those thoughts. Where reference has been made to observable actions in the classroom, this information was derived from researcher fieldnotes.

From Denise's inflight thinking, four main characteristics were identified: a) Facilitating learning, b) concern for individuality, c) "person thinking", and d) lesson progress. Although these shall be discussed separately in the following section there are several instances of thoughts which could be described within more than one characteristic.

It is important to remember the assumption, described in the preceding chapters, that an almost limitless number of features exist within each case study. Consequently, a process of refinement and development occurred which involved reference to other data sources. This process was employed in order to distil meaning, draw attention to features of the data which seemed important, and make sense of the complexity in these case studies.

The process of triangulation was used at this point in the analysis to make more likely an authentic description of the phenomenon being explored (Denzin, 1978). Thus, multiple sources of data, observer field notes, and data derived from the earlier semi-structured interviews, were considered at the same time as units of inflight thought and from this examination, characteristics of inflight thoughts were developed

Characteristic One - Facilitating Learning

Inflight thoughts, characterised as "facilitating learning," were those which explicitly reflected Denise's purpose throughout the lessons. Although they could also be described as thoughts about teaching, the importance for Denise of facilitating learning appeared to be critical and, hence, these thoughts are characterised from that perspective. These thoughts sometimes related to specific teaching acts but, at other times, in the

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absence of a particular action, reflected Denise's focus on student learning in a more general sense. Monitoring and evaluating, making connections, and considering alternatives were features of this type of thinking.

Examination of Denise's inflight thoughts suggested that an important aspect of the teacher as a facilitator of learning was to maintain engagement of the students in the activities of the lesson. Although this was not made explicit in her inflight thinking, it appeared that engagement in the lesson was understood to be synonymous with student learning. Particularly with respect to monitoring, evaluating, and making connections, it seemed that once students were engaged in appropriate learning activities, meaningful learning would take place.

Monitoring and evaluating. Monitoring and evaluating were common features of Denise's inflight thinking in both lessons. She monitored her own thoughts and actions in addition to those of individual students and larger groups.

Monitoring was defined as a conscious attention to certain actions or events. It did not necessarily involve evaluating, making judgements or indeed carrying out any action. Evaluating, on the other hand, was said to be taking place when Denise compared the current situation with some standard and made a judgement regarding that comparison. Internal standards and expectations, against which student and class actions and levels of performance were compared, were not evident in Denise's inflight thoughts. Existence of these standards could only be inferred from the nature of evaluative thoughts; Denise judged that some actions were appropriate, and some were not. Examination of Denise's inflight thoughts suggested that monitoring was always accompanied by evaluative thought.

Denise's inflight thought, as she described a task to the class, "I've been talking a lot," was one example of simultaneous monitoring and evaluation of her own actions. In addition to an awareness of her actions, she seemed to be comparing the quantity of her own talking to an expectation or standard. Similarly, her realisation that she should have been paying closer attention during a student's presentation: "I haven't listened well enough," revealed both a monitoring of her own listening and an evaluation of that activity.

Inflight thoughts involving monitoring and evaluation of Denise's own actions were sometimes framed as "self-questions," a form of thinking which also occurred in the consideration of alternatives and choice-making. In one instance, as she talked to a group

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of boys, she thought, "I wonder if the girls perhaps are not getting the attention? Are the boys getting too much?"

Monitoring and evaluating of Denise's own thoughts also occurred. This type of inflight thought, however, was framed within the context of considering alternatives and is subsequently discussed in that section.

Denise made evaluative judgements based on her monitoring and awareness in all thoughts where attention was paid to the students. In one example, she thought, "I can tell from that amount of noise that a lot of people haven't started writing." Here, the monitoring of the noise level in the classroom was being used as a tool to evaluate progress towards lesson objectives. In another example, she thought, "It's fairly obvious that they're on task - - things are going reasonably well. (I can tell from the sound level in the room.)" Amount of noise in the classroom, as a measure of on-task behaviour, was only one aspect of classroom activity which was monitored and evaluated. The actions and thoughts of all participants in the lesson, teacher and students, were objects of this type of inflight thinking.

Monitoring and evaluation of students took place at both an individual and group level. At both levels, Denise's inflight thoughts related to observable actions; more internal aspects of learning seemed to be inferred from those actions. "That girl who came in late is writing a letter. I'm smiling to myself: typical!", she thought, as she watched one student engaged in a task other than the subject of the lesson. As she watched another student, she noted, "He's wasting his time but at least he's not being unpleasant, he's just being silly, basically." And, as she watched a student giving an oral presentation to the class, she thought, "She's really trying very hard to interest the students. She just isn't out the front and just trying to fill in time and get this over with, she's trying really hard."

Examples of inflight thinking, in which the observable behaviour of the students as a class group was the focus, included the references to noise level described earlier. In some intriguing thoughts, however, Denise appeared to be sensitive to less obvious features of class behaviour. At one part of a lesson, Denise thought, "there's that feeling that they are starting to do something. I can just sort of feel the change of the atmosphere in the classroom." Later, as a student was reading a piece of writing to her classmates, Denise thought: "it seems to be going over most of the kids' heads. They don't really seem to get it. It's too sophisticated for them." In these examples, reference was not being made to specific observable behaviours but to Denise's sense that certain types of activity, engagement and general confusion in these two examples, were going on.

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In another lesson, Denise was herself reading a short story to the class. As she read, she thought to herself, "What are they thinking? What is this meaning to them? What would be puzzling them as I'm reading? What are they getting out of this?" An attention to corporate learning was also evident as she cut short an explanation she had been giving to the class: "I don't want to go into too much detail, because if I go into too much detail now they won't be able to take it all in."

Making connections. Another feature of Denise's inflight thinking, which could be characterised as facilitating learning, were thoughts in which Denise appeared to be making connections. These included connections between different sections of the content of the present lesson and between the present lesson and other lessons, past and future. Sometimes, however, inflight thoughts revealed attempts to facilitate connections for individual students between the current lesson and their own individual experiences. This making of connections was interpreted as a deliberate effort to facilitate learning and engagement in the content of the lesson by making explicit to the students the relationship of individual lesson elements to an overall purpose.

Connections within the current lesson often occurred as statements of intention. Denise's inflight thoughts suggested that she recognised elements of the current lesson activity which could be linked to other elements of the same lesson. Denise read a story to the class as a stimulus for some discussion about short stories. As she read, she tried to predict what the students might be asking themselves. Having identified a possible question, she thought to herself: "That would be a good question to ask later on when I finish reading my section. I'll ask them what they thought the man was planning to do on this, what he was doing." Here the prediction about student thinking was immediately translated into a connection with a subsequent section of that same lesson. Having started to make this connection between sections of the lesson, other connections then followed. As she read a little further, she recognised a connection within this short story between the predicted question, and its answer: "That's the evidence for the question that I'm going to ask them later on." This connection with a later section of the lesson was explicitly acknowledged as she thought: "I'm planning the next phase of the lesson, the next stage."

Connections also occurred between the content of the present lesson and with other lessons which she had taught these students: "I'm pleased that she's reading a poem, 'cause it fits in with the rest of the work that we're currently doing." In one

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lesson, Denise was discussing elements of the short story as a literary form. At a certain point, she recognised the importance of the discussion for their own writing, an aspect of their learning which was not the focus of the current lesson. She thought: "I should link this to their own writing - - it's a good time to link it up." Her use of the linking concept demonstrates her conscious use of connection as a technique for facilitating learning. Similarly, Denise linked other work in which she expected the students to be engaged: "I'll remind them about the other things they've got to be doing."

Another aspect of this making connections feature was when connections were made between the content of the present lesson and with other lessons to be taught in the future. In the lesson involving short stories, Denise considered possible future lessons as she thought: "I'll try and get them to do some short story writing of their own even though they don't have to do that now." The absence of an opportunity to provide connections also featured in her thoughts: "They don't have short stories, I haven't had a chance to give them out any short stories to read, so there isn't any sort of ongoing link up I could make with the next lesson." Denise seemed to regret situations where she could not provide the students with connections between the current and future lessons: "I really should have given them something, you know, ongoing, to connect into the next lesson."

The inflight thinking of Denise also revealed attempts to make connections between the current lesson and the experiences of individual students beyond the classroom. Considering topics which might serve to engage a student in a writing assignment, Denise thought, "She might be interested in Port Arthur, and there's things in the newspaper about it." Here, it appeared that Denise was attempting to make connections for this student between the writing activity and items which had been prominent in the newspapers, such as the shootings at Port Arthur.

Considering alternatives. The final feature of Denise's inflight thinking within the engaging learners characterisation was described as "considering alternatives." The alternatives being considered by Denise were courses of action which could be taken either within or beyond the current lesson. In some but not all cases alternatives were then put into action. The general sequence of inflight thinking throughout the two lessons appeared to be an identification of alternatives, consideration and evaluation of those alternatives, followed by making a choice. Sometimes the making of a choice was accompanied by further consideration, which could almost be described as justification of

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that choice. At other times, choices were expressed as intentions to act before the action was actually implemented.

Initially, Denise identified available alternatives. Occasionally these alternatives were framed as "mental memos" or reminders to herself such as, "I want to get through this fairly quickly" and, "I should go back and sit at my desk." In an example of this she thought, "I've got to keep on looking back at Erica and Ingrid, I've got to bring them in, to make sure that they're paying attention." Her subsequent identification of a relevant way of explaining a concept appeared to reflect this reminder. At other times, alternative courses of action did not appear to be so readily available. Inflight thoughts, such as : "what will I say when she's finished?" and, "I'm working out how to get the situation the way it should be," suggested attempts to generate alternatives from which she could choose.

The nature of the alternatives identified by Denise is interesting when considered in relation to Shavelson's (1983) findings regarding decisions to act or not to act. As shall be noted below, alternatives sometimes involved activity or maintenance of the status quo. At other times, however, both alternatives involved some new action for the teacher. As shall be described subsequently, Denise often did choose to engage in a new action, rather than to maintain the status quo.

Once alternatives had been identified, consideration of those alternatives took place in which the relative advantages of each were weighed against possible disadvantages. While the advantages and disadvantages included in this consideration were not always evident in Denise's inflight thought, there was evidence that consideration was taking place. The most common form of evidence for this was inflight thinking involving self-questioning. Having noticed a student engaged in an off-task activity, Denise thought: "Is it better to ignore it and not cause a disturbance or maybe a ruckus, or should I intervene and make sure he's doing the right thing?" In this example, at least one advantage for each alternative was revealed in inflight thinking. More common were thoughts, such as an instance in response to the amount of noise in the room: "What am I going to do to do that? Circulate around the room or actually say something?" In this example, two alternatives were being considered; to walk around the room or to say something to the students about the noise, but the advantages of each alternative were not revealed. This latter example involves consideration of alternatives, both of which would involve the teacher in a new course of action. Other inflight thoughts were of a type illustrated in the former example, where one alternative involved

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a continuation of the current situation, but the other involved some new course of action. Denise's thoughts in the final moments of one lesson were another instance where these type of alternatives were being considered: "This is a bit noisy, we're wasting a bit of time here but it's only a couple of minutes, and it'd be counterproductive to try and get them to start working again." Here the disadvantages of the alternative meant that despite a maintenance of the status quo in which there would be some time wasting and excessive noise, this would be the preferable alternative.

While in these examples Denise was considering two possible alternatives, sometimes a greater number of alternatives appeared to be involved in her consideration. Inflight thoughts such as, "We've got just those few people, what will be the best sequence?" and, "ticking off in my mind the things that they could do during SSW (Silent Sustained Writing) time," suggest that, in these instances, there were a number of different alternatives from which Denise could choose.

Choices were made following this consideration but not always evident in inflight thought. In these cases the choice was revealed by Denise's engagement in a particular course of action, recorded in observations of the lesson and in fieldnotes. The making of choices was sometimes accompanied by a simultaneous consideration of that choice which seemed to serve as a form of justification of the choice as it was being made and enacted. As Denise began to provide some background to the author of a short story she was going to read, she thought, "I'll give this bit of an introduction about Roald Dahl, to give them that transition time, rather than just sort of starting straight into the short story, 'cause it takes them a few minutes to switch." In this example, the choice to give the introduction had been made but consideration of the choice was continuing as she began to enact that choice. This consideration, even as a choice is being implemented, suggests that a last minute change of action could be possible if necessary.

Finally, in this examination of Denise's consideration of alternatives, was her expression of intentions such as: "I will explain what it means," "I'll give him the opportunity," and, "I want to make a start on reading this story, I'll read the rest of it to them at a later lesson." Typically, this expression occurred before the choice was put into action. It served as a signal that a choice had been made but also as a form of prompt for future action.

Earlier in the examination of this considering alternatives feature of Denise's inflight thinking a sequence was reported which led from identification of alternatives, and consideration of those alternatives, to making a choice. It was noted that sometimes,

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making a choice was accompanied by further consideration which could almost be described as justification of that choice, and that choices were sometimes expressed as intentions to act before the action was actually implemented. In a vignette illustrating this sequence Denise attempted to engage one student in a writing exercise. Having recognised this student's need, Denise's attempt to identify some alternatives was expressed as a set of questions: "What is something that she might get interested in, excited about? Something that would turn her on and make her want to write rather than just have to write?" Although it was not articulated prior to consideration, Denise identified the Port Arthur massacre as a topic about which the student could write. No other alternative was generated. In considering this alternative, she thought, "Maybe she'll be interested in that, she's that sort of girl." Denise then put her choice into action and suggested to the student that she write about this topic. As she did so, she thought, "Maybe Port Arthur's not a very good thing to write about but it's something that's topical." This ongoing consideration became an evaluation of the choice as it was put into action.

Another vignette illustrated the generation of more than one choice. Denise noted that, although she wanted to move on to a reading activity, some students were still engaged in a writing activity assigned earlier in the lesson: "How advanced are they? ... I want to start the short story, there's not going to be enough in the lesson if we go straight from writing to sharing." Implicit in her thinking at this point seemed to be identification of one alternative; to let the writers continue and then move straight from writing to the subsequent sharing activity. The difficulties associated with this alternative were being simultaneously considered. Another alternative was then identified: "Can I start reading the short story and let some of them keep writing at the same time?" and this alternative was then enacted. Even as this was happening, Denise acknowledged the limitations of this choice: "This is going to be hard. If some of them are writing, and I'm reading, it's going to be hard to get them all focussed." But, nevertheless, she persisted with the same course of action. Without explicitly justifying her choice, this persistence suggests that, in this case, the advantages of the choice appeared to outweigh the disadvantages.

Characteristic Two - Concern for Individuality

Thoughts related to the individuality of students were characteristics of Denise's inflight thinking. These thoughts are defined as those in which Denise made specific

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reference to individuals or to characteristics of those individuals. It has already been noted that some thoughts described within the facilitating learning characteristic also related to individual students. Describing "concern for individuality" separately, however, seemed appropriate, since attention to these individuals was a distinct characteristic of Denise's inflight thinking. There were several features of this characteristic: Recognition of individuality, meeting individual needs, and prediction and anticipation of student responses.

Recognition of individuality. Inflight thoughts featuring Denise's recognition of individuality were those in which she noted traits which were peculiar to those individual students. As she watched one student's behaviour early in the first videotaped lesson, she thought: "Bob is reverting to the way he used to behave last year. He's really playing up for it [the camera].". In another lesson she noted that a girl had come late into the room but, instead of catching up with work, was writing a letter. Denise's thought of "Typical!", suggested a familiarity with that student, and illustrates an awareness of the student's individual characteristics. In another instance, the "typical" thought reemerged as she listened to a student's evasive response to her direct question: "Well, typical. Very hard to pin down." Again, this suggested that the observed behaviour was a characteristic of that individual student with which she was familiar.

Sometimes recognition of individuality took the form of awareness of that individual student and a sensitivity to patterns of behaviour which seemed uncharacteristic: "What's wrong with Alex? What's the go with him?" and, about a student's faltering oral presentation to the class, "She's a little bit nervous." At other times it was an evaluation of a student's effort in relation to a perception of that student's ability: "You mightn't have done as much as everybody else, but for you it was a really good effort."

Meeting individual needs. Denise's recognition of individual needs was often complemented by inflight thoughts in which she considered the meeting of individual needs. In one lesson, as she was talking to one student, a group of others were being unruly in another section of the room. Denise thought: "I'll let them get away with it now, ... because its more important to talk to her, to answer her question." This suggested a recognition that the importance of meeting an individual student need outweighed, at least in this instance, that of responding to the unruly group. The relative

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importance placed on meeting individual needs was suggested in a vignette concerning another student. In this instance the student was asking Denise to get from the store cupboard, a text of the next level of difficulty. Denise's initial thought, as she was engaged in discussion with another group of students, was, "I'm going to fob her off and say 'No'." Almost immediately after this, however, she thought: "But it is a promotion to a higher level reading journal and I've been promising it to her," and then, "So, even though it is a real nuisance to, I'll open the cupboard again." It appeared that particularly if a student had articulated an individual need, Denise would make some effort to meet that need.

Sometimes, however, students did not explicitly state their own needs. Nevertheless Denise's inflight thoughts revealed a sensitivity to those individual needs and an attempt to meet them. One student appeared upset about having lost his special pen. Denise thought: "I didn't know how much he loved his special pen so I'll be nice about it!" Another student was struggling to answer a question posed by Denise. Denise thought: "She can't answer. The question I asked was too hard perhaps for her," and then, "So I'll sort of deflect, cause she looks a bit done in, she doesn't know what to say." In addition to this sensitivity to individuals, Denise appeared to be able to consider the class as a group of individuals. These inflight thoughts lacked the specific attention to single students but did indicate her attempts to meet the needs of the group: "I don't want to go into too much detail, because if I go into too much detail now, they won't be able to take it all in."

Predicting and anticipating student responses. A final feature of Denise's thoughts, characterised as concern for individuality, was the predicting and anticipating of student responses. Inflight thoughts of this type reflected Denise's looking into the immediate future and making predictions based on her knowledge and awareness of individual student traits. In one instance a student had just returned from an overseas trip and Denise's prediction appeared to be based on an awareness of this: "Well this is all going to be foreign to him 'cause he doesn't even know we're making a poetry anthology." More commonly, though, were thoughts in which responses were anticipated based on an awareness of a student's personal characteristics. As two students were about to make an oral presentation, Denise thought: "I'm pleased that I've got those two girls, they will be able to handle it. I know they'll be prepared." As a different two students began their presentation, however, she thought: "Ohhh, this will

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go on for yonks and it'll be an utter disaster." As she asked a question of the class, Denise's inflight thoughts revealed a similarly pessimistic prediction: "If I ask Scott he'll probably say something stupid."

In the same way that Denise's recognition of individuality was sometimes reflected in thoughts about the students as a group, she also anticipated the responses of the students as a group. These predictions appeared to based on her knowledge of individual characteristics as well as her knowledge of the interaction within the group. "I've said, 'Open your books and do this,' but people won't," she thought, as she wrote on the chalkboard. Later, as students were making presentations, her inflight thoughts about the student "audience" revealed both an awareness of individual and group characteristics: "I know that nobody is going to say anything really stupid."

Characteristic Three - 'Person Thinking'

Person thinking was the term used to describe that characteristic of Denise's inflight thinking in which her own feelings and emotions were revealed. This characteristic included instances of inflight thoughts where specific reference was made to her own affective state and others, where this was implied. These inflight thoughts tended to feature either feelings of concern and frustration or feelings of pleasure and surprise.

Concern and frustration. Expressions of concern and frustration were sometimes related to the actions of individual students. One student, for example, appeared to be a source of personal irritation to Denise: "I'm starting to get irritated by Bob. He *still* hasn't opened his books. I'm feeling quite irritated by Bob." Later, in response to Bob's complaints about having lost his pen, her exasperated thought was, "For heavens sake Bob, give over!" Exasperation was sometimes also expressed in an ironic fashion: "I'm smiling to myself. Typical!"

At other times, however, frustration appeared to be as a result of unexpected interruptions to the flow of the lesson. These interruptions came from within the class and from without. At one point in the lesson, as Denise was explaining a concept, the lesson was interrupted by a student coming into the room with a request from another staff member: "What a nuisance, an interruption." This feeling of frustration was magnified following a similar interruption later in the same lesson: "Drat, there's an interruption at

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the door ... I'm a bit aggravated." Interruptions from within the class also elicited inflight thoughts of frustration. A student requested a new book: "Bloody hell, I'll have to get the key and open up the cupboard," she thought, as this request interrupted the explanation Denise was giving: "I really don't want to do that. What a nuisance, your asking for that."

Inflight thoughts reflecting concern and frustration also occurred as Denise observed students engaging in appropriate learning tasks. In these thoughts Denise's personal reactions appeared to be in contrast to her actions as a teacher. As a teacher, Denise allowed the students to make their oral presentation to the class without comment. Her inflight thoughts revealed a more personal sense of concern and frustration: "Ohh, will this agony never end?"

Pleasure and surprise. "Person thinking" was not, however, only related to concern and frustration. Inflight thoughts were also expressed in which there was a sense of pleasure, and personal engagement. Denise laughed to herself as one student directed a quip at another: "I'd enjoy saying that to Steven too!" Unanticipated pleasure and surprise was also evident in some thoughts. Although Denise had expected a silly answer, a student provided a well-considered response to her question: "I'm quite impressed with how sensibly he's answering!" Despite another pessimistic prediction about students' willingness to start writing, Denise thought: "I'm surprised. They did ... they did start!" Inflight thoughts, in which pleasure was expressed, typically related to student progress. While these thoughts suggested a less intense affective experience, they nevertheless appeared to reflect feelings of genuine pleasure: "I'm quite pleased with his attitude," and "I'm pleased with the progress that he's making."

Characteristic Four - Lesson Progress

While thoughts related to the content of the lesson and connections between the current, past and future lessons, have been described in terms of facilitating learning, Denise's inflight thinking about the progress of the lesson, in which she was currently engaged, appeared distinctive. Lesson progress, in this context, involved consideration of the lesson with reference to the passing of time. Within this characterisation there appeared to be two interrelated features: Time as a finite resource, and the flow of the lesson.

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Time as a finite resource. Inflight thoughts in which time was considered as a finite resource were relatively common. Further, shortages of this resource appeared to have a particular significance for Denise: "There's not much time left," "We're going to be very short of time," "I'm starting to worry about time constraints," and, "I'm conscious of time ... of time getting away." In one instance, time also appeared to be a resource about which she felt possessive: "I'm starting to feel that too much of my time is being absorbed by this time wasting of his." Here it was as if this one particular student had taken something from her, rather than from the lesson. This thought was in contrast to others relating to the use of time. In other thoughts time was a scarce resource but one with which there was associated no sense of ownership.

While scarcity of time was usually seen as a constraint, within which Denise was working, her inflight thoughts revealed that this scarcity in some circumstances be advantageous. In the final few minutes of one lesson, students were off-task and being noisy. Denise's thought: "We're wasting a bit of time here but it's only a couple of minutes, and it'd be counterproductive to try and get them to start working again," suggested that the limited quantity of time left in the lesson was seen as a good thing.

Consideration of the shortage of time was evident throughout the lessons; Denise did not become aware of this only as the time for the end of the lesson approached. There appeared to have been some internal allocation of time for different activities in the lesson so that, even in the opening minutes of a lesson, Denise was conscious of using the allocated resource in the way she had planned: "I've got to draw this to an end because it's gone on for too long," she thought as she made some introductory comments. In another example, Denise's inflight thought revealed an explicit reference to time in relation to different parts of the lesson: "Good grief! It's already twenty past two, so this part of the lesson has taken too long." This sense of time allocation extended beyond lesson parts to include individual students. In a section of one lesson where students made presentations to the class, Denise indicated an awareness of her own responsibility, in ensuring equitable allocation of time for students: "I'm running out of time for the next girl, so I can't speak for too long. I have to make sure it's quick, and that not too many of them say anything 'cause otherwise we're going to lose time for the next student."

Flow of the lesson. A second feature of Denise's inflight thought, within this lesson progress characteristic, was that related to the flow of the lesson. In these thoughts

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it appeared that Denise was concerned with a sense of appropriate pace and with an effective interaction between the passing of time and the activities of the lesson. Lesson flow appeared to be a tool which she used to maintain student interest and engagement. One section of a lesson had been progressing smoothly when a student appeared at the classroom door with a message. Denise had to stop her explanation to the class and attend to this messenger. In addition to her personal reaction: "What a nuisance, an interruption," her inflight thoughts reflected her awareness of an appropriate flow to the lesson prior to this interruption: "They had been listening, and it breaks the flow."

Interruptions to the flow of the lesson appeared to be, for Denise, something which should be avoided, if possible. In the previous example, the lesson flow had been impeded by an outside source and this interruption appeared unavoidable. In others examples she had more control of the lesson flow and could avoid interruptions. While she had been aware of a student engaged in some off-task activity over a period of time, she thought: "I won't interrupt the lesson by saying anything to him."

At other times, however, Denise's inflight thoughts indicated a more subtle awareness of lesson flow in the absence of any outside stimulus or obvious interruption: "The rhythm of the lesson needs to be changed," and "I need to get things moving." This reference to need suggested an understanding of lesson flow as a tool which was available to her, and which she was almost obliged to use to facilitate learning.

These two features of the lesson progress characteristic, considering time as a finite resource and focussing on the flow of the lesson, appeared to be distinctive in terms of the degree of control which Denise could exercise. Her inflight thoughts indicated her awareness of time as a finite resource, one which once gone could not be replaced, and one over which she had limited control. The flow of the lesson, on the other hand, was an aspect of lesson progress over which Denise had more control. The pace of a lesson could be altered by her, and interruptions could, at times, be avoided. Irrespective of the degree of control, however, Denise seemed to perceive the progress of a lesson as being closely related to student engagement in the desired content of the lesson. Her inflight thoughts, characterised by an attention to lesson progress, indicated a conscious effort to make effective use of time for the purpose of individual learning: "I'm plotting time ... thinking about how much ... what each kid can do," and "I'm running out of time for the next girl, so I can't speak for too long, I have to make sure it's quick, and that not too many of them say anything 'cause otherwise we're going to lose time for the next student."

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Summary of Characteristics

In the preceding section, Denise's inflight thinking has been explored and described. Four main characteristics emerged from this exploration, which seemed to summarize the essence of this inflight thought. These characteristics were a) facilitating learning, b) concern for individuality, c) person thinking, and d) lesson progress. These characteristics have been individually described and analyzed, their salient features noted.

Throughout this section, the focus of the exploration has been on the inflight thoughts themselves. In the section that follows, possible relationships are examined, which exist between these inflight thoughts and the guiding principles identified earlier in this chapter.

Relationship Between Guiding Principles and Inflight Thinking

In this section I shall examine relationships between those principles which seemed to guide Denise's teaching and her inflight thinking. Guiding principles discussed earlier in this chapter shall be used as a basis for this exploration. As has been noted earlier in this chapter, there existed close relationships between the five principles guiding Denise's teaching. Similarly, close relationships also existed between the four identified characteristics of her inflight thought. An examination of the relationships between guiding principles and characteristics of inflight thinking, however, seemed to provide a more comprehensive understanding of Denise and her understandings of teaching than would examination of either aspect in isolation.

The Role of the Teacher is to Facilitate Learning

A personal conviction that the role of the teacher was not to direct but facilitate student learning, was a guiding principle evident in Denise's inflight thinking. Operation of this principle could be seen in two areas: with reference to specific teaching acts, and with reference to a more general focus on student learning. The key to facilitating learning appeared to be to maximise student engagement in the learning process.

To this end, Denise, in her inflight thinking, was conscious of the degree to which the students were engaged in the lesson activities. At one level, this engagement

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involved attending to the topic of the lesson, rather than off-task conversations with other students or playing with scissors. At another level, engagement involved the students making some cognitive connections between their own existing knowledge and new learnings. Features of Denise's inflight thoughts, described as monitoring and evaluating, occurred at both of these levels as she considered her own actions, actions of individual students, and those of students as a group.

Inflight thoughts, related to the making of connections, were further indications that Denise was being guided by a principle of facilitating learning. Although this may be considered a more explicit teaching act than simply monitoring and evaluating the degree to which student were on-task, it still appeared to be guided by a desire to facilitate learning rather than by a desire to impose knowledge. The making of cognitive connections occurred in several different ways; making connections within and between lessons, and between individual's prior and current experiences. Implicit in these inflight thoughts seemed to be a conviction that, once students could establish connections between apparently isolated fragments of knowledge, effective learning would take place.

Consideration of alternatives, another feature of Denise's inflight thinking, also seemed to be guided by a principle of facilitating learning. Thoughts, in which she identified alternatives, were concerned not with teacher control or imposition of knowledge but student engagement. Similarly it could be inferred that consideration and evaluation of these alternatives was being guided by her principle of teacher as a facilitator of learning. Alternatives were chosen which maximised student engagement; being sensitive to individual preferences and making connections wherever possible.

Other evidence that the principle of facilitating learning was guiding Denise's teaching can be seen in the lesson progress feature of her inflight thinking. Denise's sensitivity to lesson flow, conspicuous in her inflight thoughts, seemed particularly relevant in this context. In her role as facilitator of learning, maintaining an appropriate flow; avoiding interruptions, and allocating time effectively, appeared to be an important aspect of Denise's teaching. By these means, student engagement could be increased and learning facilitated.

Finally, the operation of this guiding principle can be inferred from the absence of thoughts about roles incompatible with that of a facilitator of learning. In earlier interviews, Denise had noted that, "When I first started out we taught them. Nobody had really said anything about learning, it was all teaching." That Denise now thought of herself as a facilitator of learning was suggested by the fact that her inflight thoughts

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contained no evidence of that earlier described role. Teaching, directing or instructing, as activities in which a teacher might engage, were not mentioned in Denise's inflight thinking.

Being Conscious of Student Individuality

There was evidence throughout Denise's inflight thinking of a strong relationship between those thoughts and the guiding principle of being conscious of student individuality.

This relationship was most obvious in inflight thoughts featuring concern for individuality. In these thoughts she recognised individuality and demonstrated a familiarity with characteristics of individual students. Her inflight thoughts also reflected attempts to meet the needs of those individual students by a range of means. Another feature of Denise's inflight thoughts was her predicting and anticipating of student responses. Implicit in her ability - - and willingness - - to predict, was an understanding and awareness of the individual students at a more than superficial level.

Consciousness of student individuality could also be seen to guide inflight thoughts characterised as facilitating learning. Reference has been made to the existence of some implicit standards by which student actions were evaluated. This could be taken as evidence of a relationship between inflight thought and guiding principles in that the standards appeared to be slightly different for individual students, suggesting an understanding of student individuality. Similarly when considering alternatives, consciousness of individual student needs was a factor which emerged frequently in Denise's inflight thoughts. Consciousness of individual student needs was also evident in thoughts concerning flow of the lesson, an aspect of lesson progress.

There appeared to be a relationship between the principle of being conscious of student individuality and inflight thinking characterised as "person thinking." Within this characterisation it could be seen that individual student actions could be a source of both frustration and personal pleasure. One student appeared to exasperate Denise during the lessons. Other students, however, generated thoughts of pleasure and surprise as a result of their comments and engagement in the lesson. In the same way that ability to predict individual action implies consciousness of that person, the emotional response of surprise in these instances, could be taken to imply that Denise possessed an awareness of these students as individuals.

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Relationships between a principle of consciousness of student individuality and inflight thinking characterised by attention to feelings and emotions were noted by Denise in subsequent discussion. Although Denise's conception of the class was as a group of individuals, she commented on situations where the actions of some individuals within that group impacted in a more generalised way on relations between other students and the teacher: "When you've got difficult kids in the classroom they just undermine the learning environment for everybody because the teacher's constantly on guard and so these kids prevent you from relating properly to many of the others in the room." It was clear in this statement that Denise perceived a direct link between proper relationships between the teacher and individual students and effective learning.

She acknowledged, however, that a bidirectional relationship operated in these situations: "It works both ways because when they're more pleasant then you can be more yourself. And you haven't got to put up that barrier and you're not getting angry with people, and making other kids feel on edge." An implication of this was that in situations where she was able to be herself, she was able to a more effective teacher; establishing relationships and interacting more effectively with individual students. Consciousness of individuality appeared to extend beyond the characteristics of the students to include characteristics of herself as a teacher and an individual in the classroom.

Keeping In Touch With Each Student

Inflight thinking guided by this principle could be expected to illustrate a conscious effort to make contact, at some level, with all students in the class; not only the most vocal, highest achieving, or those with special needs. This principle seemed to be closely related to the principle of consciousness of individuality although its operation might suggest thinking more deliberately related to teaching action.

While Denise believed that the principles she described guided her teaching in all teaching situations, the principle of keeping in touch with each student was one that seemed to have special significance for Denise, when teaching in an inclusive classroom. In earlier interviews she had commented on the importance of maintaining contact with each individual throughout the lesson, in order that different student needs be recognised.

This principle of "keeping in touch", for Denise, meant not simply being conscious of individual students but making those students aware of her consciousness.

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The most obvious level at which this keeping in touch could be made were when inflight thoughts reflected a deliberate interaction with a student for the sake of that interaction, itself. Such thoughts were not common. There were instances of inflight thoughts where Denise consciously addressed her monitoring and evaluation to different groups and individuals across the class. In one instance, as she spoke to a group of boys, she made a note to herself that she should be careful to also give girls her attention. In general, however, Denise's inflight thinking reflected few deliberate efforts to make individual students aware that she was conscious of them. Absence of these thoughts in the stimulated recall interviews may be explained by the existence of less conscious thoughts, in which regular interaction with students occurs at a more automatic level.

More common were inflight thoughts in which Denise attended to individual students according to their needs: adjusting the pace of the lesson, giving additional explanations, making connections for students between prior and new knowledge. These thoughts were less obvious attempts to keep in touch with individuals at a personal level, but clearly attempts to keep in touch with the learning of all students in the class. It was not clear, however, whether those students were aware that, in attending to these needs, Denise was attempting to make contact at a more personal level.

Limited evidence of this guiding principle in Denise's inflight thought may also be explained by her observations, reported above, concerning personal barriers between teacher and student. While the principle of keeping in touch may be guiding her teaching, other factors, such as a need to be "on guard" may be interfering with the operation of this principle in her inflight thinking.

Encouraging Challenge

Denise described the principle of encouraging challenge as referring to the importance of individuals challenging themselves. Rather than have students seek to meet challenges assigned by the teacher, this principle meant that students would set their own standards and continually adjust those standards according to individual progress. It was noted that this principle was an important one in the context of a class such as she was teaching, where students represented a broad range of ability and interests.

There were, however, no inflight thoughts in which explicit reference was made to individual challenge. This is not to say that this principle was not operating. Rather, its operation can be implied from thoughts relating more generally to facilitating learning

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and to those in which there was a concern for individuality. There was a sense in which an appropriate degree of challenge for individual students was a factor in Denise consideration of choices. Examples of these thoughts were those in which she considered the difficulty of a question she was about to ask, and ensured that students who had prepared an oral presentation were given opportunities to make those presentations. Similarly, in thoughts relating to individuality, it was clear that Denise's awareness of individual skills and interests was a factor when considering whether an activity was appropriately challenging.

In these instances, choices regarding the setting of appropriate challenges appeared to rest with the teacher. Denise's inflight thoughts tended to relate to the challenges which she was setting for the students rather than to ways of encouraging students to challenge themselves. It could, however, be asserted that this principle of encouraging individual challenge was deeply embedded in the whole structure of the lesson. Denise described the way that English was taught in her classes and those of other teachers in her Department. This method, which was evidently operating in Denise's lessons, involved a significant amount of student choice. Given the embedded nature of this teaching structure, the absence of conscious thinking about students challenging themselves was not particularly surprising.

Developing A Sense Of Responsibility

The relationship between this principle and Denise's inflight thinking was very similar to that between inflight thinking and the principle of encouraging individual challenge. In both cases, increased student involvement in their own learning was a critical element and, in both cases, the underlying structure of the lesson seemed to be the way in which these principles operated.

Again, there was no explicit reference made, in Denise's inflight thoughts, to this principle. Consciously developing students' sense of responsibility did not emerge in an examination of those thoughts. In the same way that encouraging challenge was embedded in the structure of the lesson, it was likely that inflight thoughts related to the development of individual responsibility, were operating at a less conscious, more automatic level. Denise had mentioned, earlier, the fundamental importance of students making choices about their own learning and a significant proportion of the lessons were concerned with activities based on individual choice.

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That the principle was guiding Denise's teaching could be inferred from other inflight thoughts. Thoughts in which Denise chose to allow students to continue with their own chosen actions, whether or not they were related to the subject of the lesson, could be interpreted as guided by a principle of developing student responsibility for their own actions. Similarly, allowing students to continue making an oral presentation, which Denise believed would not be sufficiently interesting, could be seen as an example of this principle in operation.

Chapter Summary

This chapter has been concerned with Denise, an experienced teacher of English, who is teaching in an inclusive classroom. The voice of Denise has been heard in the presentation of a focussed life history and an explanation of her teaching. Denise's guiding principles were then described and analysed.

Following a description of the context in which the teaching of two lessons was carried out, Denise's inflight thinking during these lessons was presented and examined. It was asserted that Denise's inflight thinking could be described within four characteristics: Facilitating learning, individuality, person thinking, and lesson progress.

In the section that followed, relationships between these four characteristics and her five guiding principles were explored. While a clear relationship was evident with respect to the facilitation of learning and concern for individuality, inflight thinking did not reflect explicit attention to the encouragement of challenge or development of individuality. It was suggested that, given the way that English was taught in these lessons, thinking about these principles may have been more automatic and hence less available for stimulated recall. Explicit attention to lesson progress was, however, a feature of inflight thinking that had not been mentioned in discussion of guiding principles.

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CHAPTER SIX

Case Study Three - Lysander

This chapter, third in the series of case studies, follows the same format as the preceding chapters. It is divided into four main sections: a) An examination of the participating teacher, b) information about the context in which she is teaching, c) description and analysis of the teacher's inflight thinking, and d) an exploration of relationships between the teacher's guiding principles and inflight thinking.

Featured in this case study is the participant known as Lysander. Lysander teaches in the same school as Denise, the participant featured in the preceding chapter. Lysander, however, is a teacher of social science. A cheerful, confident and articulate teacher, she had, at the time of the interviews, been teaching for approximately 26 years, the last five at this school.

The Teacher

In the section that follows, Lysander introduces herself and provides some insights into her life and her teaching. The words used in this section are those of Lysander, compiled from transcripts of semistructured interviews or from researcher fieldnotes.

Focussed Life History

> A personal profile. My name is Lysander. I'm a high school teacher in a city in rural NSW. I have taught a lot of subjects. This year I'm teaching some subjects in Cultural Studies, the history subjects, and subjects in HSIE[4]: the geography and the business studies and the general studies. I teach years seven to twelve but I've got no year nine class this year. When I first started teaching I was a social science teacher but I got to teach General Activities so that's English, Maths and Science.

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4 Human Society and its Environment (HSIE). One of eight Key Learning Areas (KLA) for secondary students in NSW.

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I came to be a high school teacher because I thought I'd have more interesting things to talk about to the students. More than just doing things which are very basic. I thought that the sort of things that I wanted to do with the students were presented more at a high school or a tertiary level.

I was led into social science teaching because I always had an interest in that area of the curriculum. I just found it easy. Easy and interesting. If I hadn't been a teacher I would have been a town planner or something along those sorts of lines. Social sciences, you know, heritage work, all that sort of stuff.

My initial training was at Macquarie University, BA Dip Ed in social sciences and history, double major. I wanted to just get through everything and have time off in the fourth year to play the stock market. I did some economics too. That's what I was going to do, I was going to be a capitalist!

I was bonded[5] for five years so I went straight off into teaching. That was in 1972. It was very hard at first because I was given all these subjects to teach that I knew nothing about and that has happened so many times. Always preparing new subjects, that you had no training in, to teach all the time. Sometimes it's just ridiculous, but you have to fit in, especially in those small schools. You have to be prepared to do things. You do the best you can and you do quite a good job of it.

I've taught at a number of different high schools, large and small, and mainly in rural areas. In many cases I have gone to those schools because I'm married to a geologist and so I've gone to where he's been transferred. The longest time I've been at one place was out at a large school in the west of the state. I was there for eight and a half years.

I was much more ambitious when I was teaching out west, aiming to get lists[6] and all that sort of stuff. But then I started having a family and what always seemed to interrupt me was sort of moving and having children. You know,

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5 Bonded. Teachers at that time who were recipients of Government teaching scholarships were required to work for a specified period of time and in locations determined by the Government teaching service.

6 Promotion lists. At the time being referred to here, teachers could apply to be evaluated and, if that evaluation were successful, could then be placed on a list for a promotion position as one became available.

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that's what happens. So probably being female, having family roles has interrupted that professional career. But then at the same time I think to myself, "Well is that what's important?" And I think, "Well, I have more responsibilities now because I have a family" and so that's not appropriate for me at the moment. Teaching is easier now because the kids are older. Everything gets easier when your own children get a bit older and they can do a lot more for themselves.

I like to see people changing. Maybe because you've worked together that person has chosen a career or gone on to experience more things, they haven't been left in that same little community that they started off with when they started off at school, they've actually gone on and developed themselves. I like that. Sometimes it can be just someone getting over the point of not being able to contribute in a classroom and they become more confident. It can just be because you've been there and you've seen how they've worked and you can see them getting on top of things. It's good. You're more likely to see that if you're at a school for a longer time. I like roots, I like stability.

I think it's a low point when you feel that there isn't support for you in different activities that you want to do, or with particular students. That has happened at different stages and it has been quite devastating on me, made me sick. Made me sick and very anxious. In fact I couldn't go to school for a while because I just couldn't go to that place where they didn't care about kids. Couldn't go.

That's why I don't like to be like a Year person[7], when I was doing that I found it to be a real big burden and I shouldn't have. It was always all too personal for me, I didn't like it. I found it very, very bad. And yet, someone needed to care about those kids and help those kids through and it wasn't happening in an effective way. Quite theoretically, I can see what you should do and what you shouldn't do, but I don't want to be in that circumstance, so I don't do that job. I took the kids to heart too much. I needed some distance. I think the things that used to worry me were when kids did bad things. It used to worry me a lot. You know, as if it was your responsibility.

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7 Year person. A position within a state Government high school. Each year or grade has a teacher who, in addition to his/her normal teaching duties, is responsible for overseeing the pastoral care needs of the students in that grade.

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It still does worry me if a kid's underperforming or s/he just seems "off the air." But, I don't feel like it's my *own* responsibility to change them. It's amongst a group of people and we do have the structures at this school to do it. We do deal with things at this school. I think it's basically done as fairly as can be done. And I think that's good. You don't feel like it's going to be pushed back, given the big flick back to you.

I probably do care too much, I think. That's just me, too sensitive.

Teaching information. I've been asked to describe what I do as I teach this class. My approach is relaxed. Just enthusiastic and relaxed. Just go in there and just do what we want to do. Quite often things change during the course of the lesson, about different things that come up. So you get a bit sidetracked but they're still sort of on the topic.

The appropriate thing for me at the moment is to have fun with the students that I have, and, therefore, that makes work more enjoyable and makes me happier. I still have a great interest in getting the best I can out of kids, whatever that may be.

I do a greater variety of activities so that children can try things out and, because of that, you find that people have got different strengths and weaknesses. It's good to have a variety and change them around, because then you don't get too bored. I find that with teaching anyway, I don't like doing the same things all the time.

I like to do a lot of practical work and go on a lot of excursions. So I've got excursions worked out for all the years and the subjects that I have. I do really try to think of interesting things to do and try to be very encouraging, and try and use the language of inclusion. I try to offer a lot of opportunities to kids.

We've had guest speakers and we've been out on excursions, and we're planning some more things, and I've asked them who they'd like to have come along with them, so there is that sort of discussion. You're able to discuss with them different little aspects and encourage them to take a bit of interest in what they're doing and responsibility.

I'm probably considered reasonably formal because I make the students stand up at the beginning of the lesson, in year seven and eight. I expect them to

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all have their hats off in class. I expect manners, so I pick them up on that. That probably makes me a fuddy-duddy!

I show them how. I always demonstrate. Especially with skills, I always demonstrate, so if they've been away or if they weren't paying attention or whatever. I always demonstrate it first and then they watch and they copy it down, and then they are given the same exercise or the same skill to do, different figures for example or something like that. And then they have a go at it, so it's really fresh in their brain, and any problems they might have, about remembering or understanding, can be fixed up straight away, before they go the wrong way.

You have to consolidate although you often don't have time to. For example, when they're doing climactic statistics and graphs, I just get them to always do the same colours. I explain it and I say, "You must always use the same colours, red for temperature and blue for precipitation." I always teach them to do that, and then they do the graphs. Instead of doing the whole thing. The whole thing includes also the questions, but it works better if they consolidate just the smaller steps. Don't move a mountain, just move a hill. And it works, you know, that's the thing. You can see it in the marks, it works. They see that connection because I've explained it to them, I've told them. They see it, and they're happy because I think there must have been only about four kids who didn't get perfect scores. Well, that's success. It's good. It works.

I use a lot more feedback techniques with students too, now, to find out how they think they're going and what their expectations are in a course; whether they're fulfilling them or whether I'm fulfilling them and that sort of thing. I try to challenge them to think.

I like teaching this class. I usually have a few different sorts of lessons that I go in with. Different ones depending on how they responded in the past to that sort of activity, and what time of the day it is. But usually you can do just about anything you want to do with that class. There's lots of nice kids in there and they're quite interested in doing what you want to do. They're just happy to go and do most things that you provide for them, be that practical or just any sort of activity. They're quite content to do whatever you're doing.

The main problem, I would say, with this class is getting them to read for you, they won't volunteer. I want the kids to be responsive. I leave the silence there and usually that embarrasses someone into doing it. It does, but it can often

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be the same people so then you've got to go around and actually ask people to read. But there's times when you might go round and have everybody read little bits. They can read as much or as little as they like out of a text book or off some sheets, whatever. Like I said, kids are not allowed to be put down so, if you're happy with reading a sentence, you can read a sentence. I'm quite happy for any kid to just stop if s/he doesn't know what to read. I don't require kids to do some of that every period, just when it happens.

You make sure that you question all kids. That you're not going to be ignoring children. Some times if you thought, "Well, a kid's not going to be able to answer some question," you'd create a question that s/he could answer.

I don't want people to feel that they can't have a go. You may not be the best at doing something, but you're never going to get any better if you're in a negative environment that doesn't allow you to try. Let's just get everybody doing it, having a go. Of course, I think the more you get over that little threshold, the more likely they're going to be to have another go. Build on success. Success builds on success. Hopefully you'll be able to reach some of them [students].

I used to always try to be reaching all of them, but I think that's a bit ambitious these days. I used to feel very bad if you weren't getting to them but I think it's a bit unrealistic. So you just do your best; be a role model, and treat them with respect, and remind them about their manners and things like that. And try to understand some of the formality of growing up. It's not the same as being out on the playground, it's different. Expectations are different.

Guiding Principles

Having heard her provide some biographical information and describe some details of her experience of teaching, the case study now turns to some exploration of the principles which appeared to guide Lysander's teaching. These principles were derived from the transcripts of semistructured interviews.

About teaching in general. Lysander is an experienced teacher who has taught in a number of secondary schools. She is a cheerful woman with a brisk and lively manner. In suggesting that she would be an appropriate participant in this investigation, the

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Principal of Anzac High School noted that Lysander was a teacher who appeared to have well considered views on teaching, and who was usually willing to express those views frankly and honestly.

In exploring Lysander's guiding principles, it quickly became apparent that, in many cases, the guiding principles she identified were also those of the school in which she was now teaching. Rather than referring to her own principles, Lysander frequently commented that "At this school we ...," as if her understandings about education and those of the school were one and the same. This could have been interpreted in a number of different ways. It may have been that Lysander was choosing to conceal her own opinions by describing, instead, the espoused policies and practices of the school. A more likely explanation, however, was that the guiding principles and practices of this school are shared by Lysander and that, to a large extent, individual principles and those of the school were indistinguishable. This explanation was more likely as Lysander described several instances where her personal convictions had been at odds with those of schools at which she worked. Field notes of our conversations also tended to provide corroborating evidence of her willingness to present her own understandings irrespective of those of others.

Nevertheless, the role of the school and the school environment was clearly a significant factor in Lysander's explanation of the principles which guided her teaching. The importance of teachers receiving support from the school was an example of this. In this case, the school meant the senior staff of that school, the principal, deputy principal, subject co-ordinators, and so forth. Lysander noted that, "The principal is really important. The principal is very important in the tone of the school." Low points of Lysander's career occurred when she felt unsupported in the teaching activities she wanted to carry out. She explained how the Principal at some schools where she had worked had chosen to avoid taking action on some issues and had, instead, passed the responsibility for action on to the staff and subsequently criticised the staff. Related to this was her recognition of the pressure placed on schools in smaller centres by the community. Nevertheless, "it's more the leadership of the school that's important than the community." Lysander went on to recall that, in some situations, the Principal, "allows the community" to determine school practices, a situation she described as "the tail wagging the dog."

In the same way that low career points were associated with a lack of personal support, Lysander described her experience at her current school in favourable terms

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acknowledging that, in this environment, support was given: "Yeah, I like a school where people are working together for a common purpose," and, "You don't feel like it's going to be pushed back, given the big flick back to you."

Lysander elaborated on the importance of support for teachers by introducing the notion of care and commenting that,

> If they demonstrated their care for the students in the same way they demonstrated their care for the staff, you could tell they didn't care about anybody. That was something that used to come through a lot and so it was a very negative environment to work in. And so then you can see if you haven't got time for staff, they certainly never had time for the kids who really needed that extra bit.

This could be interpreted as a conviction that support and care extended by the school to its staff reflected broader values, which then flowed on to improved student learning. The relationship between the school's leaders and their staff was seen by Lysander as an analogy of the relationship between the teaching staff and the students. In summary, Lysander noted that, "We've got so many time constraints on us it's easy to forget that people matter. And we're a people job."

The importance of providing a positive educational environment was a guiding principle which emerged throughout the interviews with Lysander. She illustrated this importance by noting that, at her current school, "kids are very open, kids are very friendly, they're motivated to do well," and attributing this to the school environment: "It's a good working environment, a good educational environment." Conversely, when discussing the importance of students "having a go," she observed: "I don't want people to feel that they can't have a go. You may not be the best at doing something, but you're never going to get any better if you're in a negative environment that doesn't allow you to try." Although it was not made explicit in this statement, other comments indicated that Lysander was referring here to both the classroom and the broader school environment.

In this positive environment, Lysander appeared able to relax. She acknowledged that her approach to teaching was enthusiastic and relaxed, and the environment of her current school enabled her to work in a way which suited her. Further, she seemed reluctant to give an impression that problems occurred in her teaching situation. While at one point she noted, in relation to the target class, that, "The main problem I would say with this class is getting them to read for you, they won't volunteer." A short time later

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she explained that, "I mean, it's not a problem, but I need to ... you know, I leave the silence there." A relaxed, nonchalant approach to education seemed to be an important aspect of Lysander's understandings of education, and one which she appeared keen to promote.

Flowing from Lysander's statements about the importance of support for teachers, was her principle of being responsible. Responsibility, as a concept, was one which was mentioned throughout interviews with Lysander. She appeared to have clear understandings about her own responsibilities, both as a teacher and parent, and the responsibilities of the school. Lysander noted that schools' responsibilities are now increased, adding responsibility for many of the problems of a more complicated society, and to the "in loco parentis" responsibility accepted by schools for many years. Abandonment, by a school, of its responsibility to students, however, was described by Lysander as something which she found very distressing.

The responsibility of the teacher was a significant aspect of this guiding principle. Early in our discussion, she referred to a stressful time in her teaching career when she had found herself taking personal responsibility for the bad things that the students did. At her current school, however, she noted that, while she still worried about student underperformance, she no longer felt as though changing this situation was her own responsibility. Rather, "It's amongst a group of people ... we do have the structures at this school," and if somebody needed to do something, "We do deal with things ... and it's done as fairly as can be done." Lysander did, however, accept responsibility for her class. While she described herself as being "pupil centred," she asserted that she was in charge, the responsibility for the class was hers: "It's my job to make sure they're on task and that, if there's any problems, they'll actually approach me about it."

In relation to students' responsibility, Lysander elaborated: "Any person who wants to succeed with me I'm really prepared to work with. If they show any indication that, at whatever level they're at, they want to do something, I will encourage them or spend some time with them doing things with them." While Lysander stated that her responsibility was to make sure that students would approach her if they needed assistance, she also suggested that it was their responsibility to give some indication of a desire to improve. This appeared to be a situation in which responsibility was shared between the teacher and the student. While it was the responsibility of a teacher to create an environment in which all students would seek help when required, it was the responsibility of the students to initiate contact with the teacher by indicating a need.

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An illustration of the degree to which taking responsibility guided Lysander's teaching was an incident in which students tried to blame Lysander for there being insufficient time on an excursion. She described how she told them that if they were looking for someone to blame, it should be those other students who delayed the class as they were leaving for the excursion. She went on to explain, "They just wanted to fob it off. Well look, I take the blame when it's mine but I wasn't going to take the blame for that." Clearly Lysander was not prepared to repeat her earlier teaching experiences of taking personal responsibility for the things the students did.

Being appropriately responsible was a principle which could be seen to be operating throughout Lysander's descriptions of her teaching career, and which still featured in her thinking about education. When responsibility was accepted by those in positions of leadership, positive educational environments existed. When responsibility was avoided, negative situations developed. Being comfortable in her role as a teacher appeared to occur in situations where Lysander knew that responsibility for tasks would be taken appropriately, and where roles of individuals were clearly understood. Principals take responsibility for their school; staff and students. Teachers take responsibility for their class. Students take responsibility for their own behaviour and learning.

Another principle which appeared to guide Lysander's teaching was making expectations clear. In the same way that being responsible was explained for both school and teacher, Lysander articulated expectations of herself as a teacher, of the school, and of the community. Making clear one's expectations to all involved, it was implied, makes it more likely that those expectations will be met. At times Lysander seemed to be suggesting that making clear the expectations is, in itself, the technique which might be employed to help people meet those expectations. The school had expectations of its students, "kids are more likely to be concentrating in this educational environment ... they're on task, and they're expected to be on task." The community had expectations of the school: "It's more expected that schools have to be seen to be doing something about different aspects of behaviour." Lysander had expectations of the students in her class, "I expect manners, so I pick them up on that," and "when I go in the door I expect them to be standing up, have their hats off, have their bags unpacked, and be ready to work." It is interesting that in this instance, expectations were never sufficient: "there's never 100% compliance with that!" And the students have expectations of their own learning, although these might not yet have been made evident. The teacher's role here was to "find

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out ... what their expectations are in a course, whether they're fulfilling them, or whether I'm fulfilling them."

A final principle which appeared to guide Lysander's thinking about her teaching and which, she acknowledged, was a guiding principle for Lysander personally as well as in her role as teacher, was that of system and order. This could be seen to be related to other principles of Lysander's. Her interest in an educational structure in which schools, teachers, and students accept responsibility and fulfil particular roles was, in essence, an interest in an orderly and systematic structure: "Being orderly. It's probably just me. I like to have a system, and then you understand where things are supposed to be." Lysander recognised that having a system did not necessarily mean that things would happen in the way they were planned but that it did mean a person didn't have to think about things as much. She explained, "Life's complicated, so you've just got to make things easier for people, to do well and to remember." Significantly, Lysander noted that, while she encouraged students to work systematically and to plan out their work, she did not explicitly say this to the students in her class. While it appeared surprising that she did not incorporate specific reference to being systematic in her instructions to students, Lysander reflected that, "I suppose what you do in teaching is you teach them to be a bit like you, don't you?" In other words, Lysander believed that by modelling her own systematic and orderly manner, students would develop systematic approaches to learning without specific attention needing to be drawn to those concepts. Lysander explained that the systematic aspects of her instruction included, "trying to create systems that people, that help people to remember things." This reference to teacher generated learning systems may be related to her assertion that "education is like training," in that training implies a systematic approach in which, "when the training doesn't work, you've got to think about why it didn't work and go back and modify the learning situation so that they can be more successful."

About inclusive education. A defining characteristic of Lysander's understanding of inclusion was in relation to standards of academic performance, both anticipated and realised. Asked to give a non-technical description of an inclusive class, she replied, "I'd just say that it was a mixed ability classroom. They're not graded." Lysander provides more detail of this concept by explaining that in classes where students are graded on ability, this is based on past performance. In ungraded or mixed ability classes, then, prior performance is not a factor in the composition of the class. Lysander

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described her instruction in classes where the students are more homogeneous in terms of ability, graded classes, as being based on standards which are either high or low. In a class where student ability was lower, "I'd just go through it more slowly and just make it appropriate for the children there." In a class where student ability was higher, "I'd probably just make it at a higher (standard) ... talk to them at a more academic level ... I'd be expecting to get through a lot more work." The guiding principle which emerges from these assertions is that instruction should be matched to student ability. Contrasting instruction in the inclusive class targeted for this investigation with the graded or homogeneous class, Lysander explains that, in terms of instruction, "we pitch it more towards the middle."

Lysander explained that, for students to achieve something, in any class, means that they can get a degree of satisfaction from what they're doing. She acknowledged, though, that in the target class, "obviously there's going to be people who can't do things as well as others," and that, in relation to standards set down in formal syllabus documents some students will "be really strong in some things and really poor in others." To reconcile this apparent difficulty, Lysander described how she pointed out to students, "Well, this is the deal. These things you need to do to get there."

This principle of being direct and honest with students was also mentioned in relation to the feedback given to students by the teacher. Lysander described how she increasingly used feedback techniques with students now, but that feedback must be honest: "You can't fudge it. I mean I've seen people give out all 'A's', such a load of rubbish. The kids love them! But it's unethical ... it's sort of like an 'Emperor's new clothes' syndrome."

Summary

As a mature and articulate secondary teacher, Lysander had had experience of teaching in inclusive classes and was able to describe and make sense of that experience. She had taught in situations where she felt the teaching staff to be unsupported by the school administration but was, at the time of interview, teaching in an environment which she felt to be positive for both staff and students.

Lysander had, in her teaching career, taught in classroom settings where the student group was academically graded and in those where it was not. The target class for the current investigation was described by Lysander as an inclusive class and one in

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which the ability of the students was not graded but was mixed. She described how, in this class, her approach was relaxed and she attempted to provide a broad range of interesting activities for the students. She acknowledged the formality of her teaching style and expectation that students would use good manners in the classroom. Recognising the range of ability in the target class, Lysander explained that she allowed students to read as much or as little as they felt comfortable doing. Her objective in this was to ensure that students were willing to at least attempt a task.

Several principles emerged from our discussion, which were identified as guiding Lysander's thinking about teaching in general. The importance of system and order was one such principle. Her comments about ways in which this principle was enacted in her teaching, suggested that the development of system and order was imposed on the class, either explicitly or implicitly. A example of the former might be her expectations regarding routine at the beginning of lessons, an example of the latter would be her creation and use of systematic ways of learning. Lysander did not mention student creation of their own systems for learning as a feature of her teaching even though she did refer to a wish that they take more responsibility for their own learning.

Related principles were those concerned with the provision of a positive educational environment, being responsible, and making expectations clear. A positive educational environment was described as one in which teachers had support for their teaching activities, both in policy and in practice. In this environment, students and teachers were aware of their individual and collective responsibilities. A result of this positive educational environment would be effective learning for all students and a willingness to attempt new tasks.

Matching instruction to student ability, and being direct and honest, were guiding principles described as relating to all of Lysander's teaching but particularly to inclusive education. Lysander explained that, in the target class, teaching was aimed more at the middle of the academic range but that she expected students to work to the best of their ability. Further, she would provide assistance for individual students who needed that assistance but they had to first indicate that a need existed.

Ungerleider (1993) has noted that people will embrace a change if it resembles the current situation. It would appear that, for Lysander, an inclusive class was in essence the same as a mixed ability class. Possibly as a result of her extensive experience with the teaching of mixed ability classes, her understandings of inclusion and ways in which

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inclusive education might be implemented were the same as her concepts of mixed ability classes and the way teaching was carried out in those contexts.

The Teaching Context

In the section which follows, the context of Lysander's teaching shall be presented. Information relating to teaching context was derived from researcher fieldnotes, written during and immediately after visits to the school.

The School and the Class

Investigation of Lysander's inflight thinking took place at Anzac High School, a large secondary school in a regional city in NSW. Denise, the subject of the previous chapter, also taught at this school although in a different department. This school is part of the state goverment school system. The school occupies a large site and is made up of rambling buildings displaying a variety of architectural styles. Staff rooms, according to department, are located at different locations throughout the school and, while those departments tend to use classrooms close to their staffroom, teachers do not, in general, have a room that they can call their own.

Lysander's inflight thinking was examined as she taught her 8B geography class. This class, as with other eighth grade Geography classes, Lysander taught "on rotation" with other teachers. That is, she had this class only for a certain number of weeks each school term. At the time when the examination of inflight thinking was taking place, Lysander was nearing the end of this rotation. She indicated that she knew this class well and liked teaching them, that they were a nice group of kids who were usually quite happy to do most things that she provided for them to do.

Students in this class of 30 ranged in age from 13 to 15 years old. In relation to the academic ability of the class, Lysander explained that "It's got the whole range." Two of the students in this class had been identified as having significant learning difficulties and were seeing the school's Support Teacher for intensive assistance with academic skills, during the week. There were more boys than girls in the class.

There was a range of personalities evident in the class. One student was keen to have the purpose of my investigation explained in some detail during an introductory

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visit; another appeared intensely shy and asked to be seated in such a position that she would not be within the viewing angle of the videocamera.

The room in which geography lessons took place was on the second floor of one of the newer school buildings. The door into the classroom opened off a long corridor. Windows from roof to waist height covered the wall opposite the door, blinds were drawn on some of the windows. The windows looked out over school quadrangles and playing fields. The teacher's desk was at the centre front of the room. Desks were arranged in a central block with seats around three sides, surrounded by a further three-sided row facing the teacher's desk and the chalkboard behind it. The fact that this room was used by a variety of teachers for different subjects was indicated by a lack of decoration and an impersonal feel. The teacher's desk prior to the lesson was bare and notice boards around two walls had some posters. Although there were sufficient seats for the class, the room was not large, with only enough space for one person to walk between the walls and the outside row of desks.

The Lesson

Although two lessons were videotaped and a record of Lysander's inflight thinking in both of those lessons was obtained, subsequent technical difficulties made the tape of the second interview unavailable. Only the first lesson will, therefore, be described below.

I had set up the videorecording equipment before the class began. Students then entered the room and sat talking with each other. A minute later, Lysander entered the room and the lesson began with the class standing to exchange with Lysander what was evidently the ritual greeting described earlier. Students then sat and Lysander asked students to indicate if they had completed their homework. A small number had and the remainder were asked to complete this work straight away. As they did this, Lysander began asking those students who had completed the homework to read their answers. During this time the class were generally settled, either working on their unfinished homework or listening to others reading. One student, who was talking to a friend, was briskly despatched to an alternative seat at the front of the room. As students read out loud, Lysander walked slowly around the room and commented on the work that they were reading.

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In the next section of the lesson, Lysander talked about national parks and posed a general question to the class: why should we have them? Some students volunteered answers, the others continued writing.

Lysander then introduced the topic of the forthcoming excursion to a nearby national park, identifying potential features of the park which could be investigated. Another question was posed for the class, and students indicated an opinion by show of hands. Lysander proceeded with her talk about national parks as some students continued to write. Her explanation extended to related issues such as the Greenhouse Effect. Finally, as students had by then completed writing, Lysander assigned a new homework task.

A careful explanation followed, of the subsequent group activity, which was to take the remaining half of the lesson. Movement of students into six groups was also explained. The students then moved and commenced the small group activity. As this activity progressed, Lysander circulated around the room, commenting on group work and monitoring performance. The students worked together and there was little movement in the room apart from Lysander.

As the lesson concluded Lysander reminded students of the homework. The signal for the end of period sounded and students left the room.

Nature Of Lysander's Inflight Thinking

Examination of inflight thinking contained in this section was derived from transcripts of stimulated recall interviews. Where reference has been made to observable actions in the classroom, this information was derived from researcher fieldnotes. The reader is reminded that, as in other case studies, where reference was made to Lysander's thoughts this was actually a reference to Lysander's recollection of those thoughts.

Lysander's inflight thinking appeared to have four main characteristics: a) Instinctive teaching, b) "no problem", c) explicit teaching, and d) lesson thinking. While some inflight thoughts could have been described as having two or more of these characteristics, they were sufficiently distinctive to warrant separate description.

It is important to remember the assumption, described in earlier chapters, that an almost limitless number of features exist within each case study. Consequently, a process of refinement and development occurred which involved reference to other data sources.

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This process was employed in order to distil meaning, draw attention to features of the data which seemed important, and make sense of the complexity in these case studies.

The process of triangulation was used at this point in the analysis, to make more likely an authentic description of the phenomenon being explored (Denzin, 1970). Thus, multiple sources of data - - observer field notes, and data derived from the earlier semistructured interviews - - were considered at the same time as units of inflight thought and from this examination, characteristics of inflight thoughts were developed.

During the first stage of data analysis (see Chapter Three), it became evident that a significant amount of the stimulated recall interview data from Lysander could not be classified as reports of inflight thinking. Instead, much of the transcript contained explanations of the observable behaviour of teacher and students, explanations of the teaching situation, justification and commentary on various teaching techniques and reports of observable actions ("I'm just doing ... "). All of these activities were defined as non-inflight, or thoughts which were not occurring as the lesson was taking place. Rather, they were thoughts and reports which had come to consciousness during the stimulated recall interview.

One explanation for the limited quantity of inflight thought being reported during the stimulated recall interview may be that Lysander was choosing to report only a portion of her inflight thoughts. Another interpretation, supported by other studies of teacher thinking (Marland, 1986; Marland & Osborne, 1990), would be that, for much of the lesson, Lysander, as an experienced teacher, was doing things without consciously thinking about them.

Characteristic One - Instinctive Teaching

Thoughts which were characterised as instinctive teaching were those which, when recalled, were not identified by Lysander as teaching techniques but which could nevertheless be identified as relating directly to teaching and/or learning. Because they were not explicitly identified as relating to teaching techniques, they may be described as thoughts which were related to more instinctive teaching behaviours. The significance of this was that they may reveal more automatic thoughts, thoughts which are not the product of careful deliberation but which occur spontaneously, thoughts which may be based on guiding principles not explicitly revealed.

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Inflight thoughts were considered within this characterisation if they clearly related to teaching and learning, but if they did not include specific reference to an observable action in which Lysander was either engaged or about to engage. An example of such a thought would be: "I'm trying to think of things that they will understand, " which, while related to teaching and learning, does not refer to an observable teaching action.

Lysander's instinctive teaching is described below in terms of reactive teaching, proactive teaching, and predictive teaching.

Reactive teaching. Reactive teaching included those thoughts which were in response to an action of an individual student or of many students. Representative of this type of inflight thinking was evaluation of those actions. As she observed a student undertaking some written work, she thought, "She's now doing it the way I would like her to do it." Listening to students reading their homework assignments, she noted, "They're not doing it exactly the way I want them to. " The evaluative statements which Lysander made to herself usually involved an evaluation of student performance in relation to a standard which she (Lysander) had set. It seemed to be implied that the students would know the way she wanted them to perform a particular task. Inflight thoughts did not, however, reveal consideration of those standards, only acknowledgement that there was a way to do things against which student performance could be compared: "Sarah's summary is more what I would want." Evaluation in relation to more general, but still implicit, standards also occurred. As she monitored students working in groups, Lysander's inflight thoughts revealed a systematic evaluation of each group: "This group down the front here is working very well" and "Group number four isn't working well." It appeared that what constituted working "very well" or "not well" was understood by Lysander at some level, even though it was not articulated in her inflight thoughts.

Implicit in any evaluation is an initial awareness of the action being evaluated. Monitoring, in the lesson being discussed, was described as proactive teaching. Evaluation, on the other hand, was reactive. It was, however, unusual for an inflight thought, which could be described as monitoring, not to contain an evaluative element.

On one occasion, Lysander's inflight thinking contained reference to differing degrees of attention being paid to monitoring. As a student was reading from her homework, Lysander thought: "I'm not really paying that much attention to what she's

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saying." Her next thought, however, suggested a simultaneous awareness of her own monitoring behaviour: "In order for me to consolidate what is, in fact, a summary, I should be paying more attention." Her subsequent monitoring of the student's reading was more careful and could be described as monitoring in reaction to her own awareness.

In Lysander's inflight thoughts could be seen what could be described as personal responses to student actions, responses which reflected the instinctive characteristic of Lysander's inflight thinking. The answer which a student gave to a question provoked the following thought: "I'm quite surprised at him coming forward with all this information ... disclosure." Later, as she noted some confusion in the class about a particular concept, she thought, "This is really hard, they can't understand what I mean." This acknowledgement of difficulty was not a feature of Lysander's thought. It was in contrast to other "personal responses," such as those following a student's giving the "right answer" to a question: "Well thank goodness he said 'trees'!" and, subsequently: "Well thank God again, someone's given me the right answer!" In these latter examples, her personal response suggested a feeling of relief, an affirmation that the students were learning what she wished them to learn. In the former example, however, was an element of doubt and a suggestion that recognising the right answer may not be as natural for the students as it was for her. At times it appeared that there was a degree of impatience if students did not move towards a desired goal as quickly as Lysander wished. "Oh, come on, get to the point!" she thought, as a student gave a lengthy explanation which seemed to be answering the question, but which was not sufficiently precise.

Interpretation of student action was a feature of Lysander's reactive teaching revealed in her inflight thought. While acknowledging that students are engaged in certain actions was generally not described as inflight thinking, interpretation of those actions was. In one example, Lysander registered a student's explanation for not complying with the teacher's request and moving to another desk. The student's explanation was that she was not able to move because she and another student were sharing a set of worksheets. Lysander's subsequent inflight thoughts were: "That may be a ruse," and "Jackie is playing games". Similarly, as another student attempted to explain a concept, Lysander noted, "She's having trouble trying to work out what she means by 'educational'". And, following a student's incorrect response to a question, she thought, "He's done what he thought was right." These interpretations of student action in some cases appeared to influence Lysander's teaching actions. Lysander's interpretation of

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student action was not limited to individual students. As she observed a lack of student responses to a general question, she thought, "I imagine that they're worried about giving a wrong answer."

Choices to act or not to act could, in Lysander's case, be described as reactive teaching. There were, however, no inflight thoughts reported in which Lysander indicated a choice to act in a certain way. Instead, inflight thoughts relating to choice, tended to be choices not to act. Reacting to a student's apparent fabrication of an excuse for not complying with a direction, Lysander thought, "I'm not going to investigate that." Although a student gave an incorrect answer to a question, she thought, "I'm not going to criticise him 'cause he's done what he thought was right." And later, as she acknowledged that she has given an incomplete illustration of a concept, she thought, "I can't go back. I'll just add the next one." These examples of Lysander choosing not to act in reaction to classroom events reflected the findings of Shavelson (1983), in that a choice not to act is, in effect, a choice to continue with the current course of action. Lysander's motives for making this choice were not immediately apparent, although it may have been that continuing with the current course of action was perceived as a less complicated and stressful option. If this were the case it would be consistent with the guiding principle described earlier, of providing a positive educational environment, one in which she and the students felt relaxed.

Another feature of inflight thought characterised as reactive teaching was reference to the teacher taking control. As one student made excuses to try to avoid complying with the teacher's directive to move to another seat, Lysander thought, "Doesn't matter what she says, the result's going to be the same." The directive was enforced and the student moved. As she did so, Lysander's thoughts appeared to reflect a more general understanding of the teacher's role in the classroom: "If she's in my room she's going to do what I want her to do." Although these thoughts were in relation to the same classroom incident, they suggested a belief in the authority of the teacher, which went beyond that particular incident. Lysander seemed prepared to enforce her original directive simply by reason of her role as teacher rather than for any reason arising from the incident to which she was reacting. She was not going to engage in a discussion about the matter; a more general rule, that the teacher is in charge, was being applied.

Proactive teaching. Inflight thinking described as proactive teaching was said to occur when Lysander reported thoughts which, while being directly related to teaching

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and learning, were not explicitly identified as teaching techniques. The additional defining characteristic of these thoughts was that they were not in reaction to an apparent classroom event. Whereas in the reactive teaching description above, inflight thoughts were reported which appeared to be Lysander's reactions to actions of students, the initiation of proactive teaching thoughts appeared to be relatively independent of classroom events. To claim that these thoughts are completely independent of classroom events would clearly be inaccurate since, at some level, all the inflight thoughts being described here have links to classroom events: Past, current and future. Nevertheless these thoughts which appeared have their origin within the teacher, were distinctly different from those described as reactive teaching and deserved individual attention.

Stating goals was one instance of proactive thought. " 'Trees'. That's what I want to get from them, 'Trees'!" she thought, as students began to give a range of obscure answers to what she thought was a relatively straightforward question. Another example related to the generation of explanations. Here, Lysander, in her inflight thoughts made reference to an awareness of an active, internal process. As she was directing a class discussion, she thought, "My thought process about what I want to analyse here is becoming clearer." In a later example, "I can't find a word that fits in with what I want them to consider," she recognised her own difficulty in generating an appropriate explanation. These are proactive thoughts in that their origin is within the teacher, not in reaction to a student action. These examples provided both an indication that Lysander was aware of her own thinking and an insight into an uncertainty about subsequent teaching actions.

Evaluation of her own comments was described as an example of proactive teaching, in that its origin was within the teacher, rather than with other classroom events. In common with the thoughts considered above, an awareness of her own thought and speech was evident as Lysander, following an explanation to the class, thought, "I should've said that fluoron gas comes from air conditioners." Here, she was simultaneously aware of what she had said, evaluating that explanation, and considering how it could have been improved. Similarly, following some confusion about directions to move into groups, Lysander thought, "I've forgotten that I said I was having six groups. I've been thinking five." She demonstrated here that she was aware of the direction she had given to the class and was evaluating that direction.

Monitoring the actions of the students as a group was another example of inflight thought, described as proactive teaching: "What is everybody else doing?". In this

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example, Lysander's inflight thought suggested proactive monitoring because she was becoming aware of the actions of the class, although there was no specific class action which had precipitated that monitoring. Similarly, her observation that, "There are still kids writing ... doing their homework," did not indicate a reaction to a particular activity within the classroom but simply an awareness of that activity.

Predictive teaching. Predictive teaching could be seen to be related to Lysander's interpretation of student actions included in the description of reactive teaching. Prediction of student responses and thoughts was similar to the interpretation of student actions in that both were essentially Lysander's constructions. While both were based on observation of classroom events, interpretation was the meaning Lysander gave to events which had happened or were happening. Predicting was the meaning given by Lysander to events which might happen at some time in the future. This latter activity was a distinctive feature of Lysander's inflight thought which was qualitatively different to the reactive and proactive teaching, described above.

An example of Lysander's prediction occurred as she asked a student to read what he had written for homework. She first acknowledged her assessment of the student's past performance: "He's a good student too ... " and then she went on to predict that, "He'll have a reasonable sort of summary." Later, she made a prediction about the likely involvement of students in a class discussion: "Some of them aren't going to give an answer at all."

Lysander's predictions went beyond attention to student actions. Lysander sometimes made predictions about the thoughts of students. After an explanation of the harmful effects of propellants in domestic products, her inflight thinking revealed a prediction about the students' subsequent thoughts: "Now they might sort of think, 'Oh well, how can we find a deodorant that doesn't have a propellant?'" The question which Lysander predicted or anticipated that the students might ask, appeared to be consistent with her goal for that lesson. In a related example, Lysander's prediction about student thought was articulated in such a way as to take the form of an objective for the lesson. As she described a forthcoming class excursion, she thought, "I want them to be thinking that, 'Oh, it's going to be a great day together.'"

Confirmation of Lysander's predictions about student thought or action was not evident in her inflight thought. Disconfirmation of a prediction was, however, observed in relation to a prediction about a student whom she did not know well. Lysander asked

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a question of this student, noting to herself that she did not know anything about his background (he was a new member of the class). She made confident predictions about the response he would give: "He'll say 'No'. He'll be selfish and say 'No'." and "He'll have a whinge about the land being taken." The student's response, however, was in direct contrast to these predictions. Her subsequent inflight thoughts indicated that she was aware of the disconfirmation of these predictions: "He ... he said 'Yes'," but that there was no further consideration about why the student's response may not have been as she predicted.

In general, it appeared that prediction of student actions and thoughts served as an ongoing mechanism for confirming Lysander's perceptions of the students and their learning. Lack of inflight thinking, in which confirmation of predictions could be observed, suggests that, if a prediction were confirmed, as anticipated, this was registered at a more automatic level, and Lysander's teaching activities subsequently followed a predetermined course. On the rare occasions when predictions were disconfirmed, Lysander's acknowledgement was evident in her inflight thoughts. Under these circumstances, however, there was no evidence of a radical reorganisation of the subsequent teaching activities.

Characteristic Two - 'No Problem'

A second characteristic of Lysander's inflight thinking was described as "no problem". This characteristic had no particular association with either students, or teaching. Instead, it tended to be one which permeated inflight thoughts on a range of topics. Hence, thoughts which were, for example, characterised by an atten tion to instinctive teaching, may also be examples of thoughts characterised as no problem.

Thoughts were described as no problem if they included reference to the avoidance of stress or difficulties. No problem thoughts were also defined as those in which Lysander reported feeling relaxed or comfortable. An example of this thinking occurred as Lysander gave a demonstration to illustrate what she wanted the class to do: "I'll just hold all these things up so that the instructions are clear ... so that they understand what's expected of them, so there won't be any hassles." In this thought, as in others, it was unclear as to whether the irritation or inconvenience would be something experienced by herself, by the students, or by both. Nevertheless it was clear that one motivation for the demonstration was a desire to avoid a potentially troublesome situation.

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In some inflight thoughts characterised as no problem, it was not clear who was avoiding stress or worry; in other thoughts this was more evident. She acknowledged one situation in which a student did not have to move from her seat: "I'm pleased for her 'cause it wouldn't put any stress on her." More commonly, however, Lysander was identifying herself as the person who is relaxed, unstressed or comfortable. When thinking about events in the classroom, she included a description of reaction to those events: "I'm quite comfortable about it (the noise), there's going to be a bit of noise as they get themselves organised, but, you know, it's all productive sort of noise. No problem." Later, as she noted that students were taking longer to finish work than she had anticipated, she thought, "I'm quite comfortable. I am thinking about it but I'm quite comfortable about it." Thoughts such as these seemed to occur in connection with events in the classroom, where a response from the teacher might be anticipated; when students were being noisy, slow in finishing work, or giving incorrect answers. The no problem characteristic seemed to be, at the same time, a comment on her affective state and a justification for her choice to act or not to act.

Characteristic Three - Explicit Teaching

Thoughts characterised as explicit teaching were those which, during the stimulated recall interview, were identified by Lysander as being teaching techniques consciously used during the lesson. Although sometimes these techniques were specifically named as such by Lysander, "All right, reinforce it again, 'cause it was so hard to get it out of them," at other times her thought simply described an action which she was consciously performing and which had a teaching function: "I'm going to say the numbers, to reinforce the way I want them to do it." During the analysis of thoughts characterised as teaching techniques, it became apparent that there was a fine line being drawn between inflight and non-inflight thought. The guidelines which were used in the first stage of the analysis (Marland, 1977), suggested that descriptions of observable actions should be classified as non-inflight and set aside from the analysis of inflight thinking. Consequently, as has been noted earlier in this chapter, much of the content of Lysander's stimulated recall interview was classified as non-inflight thinking. Thoughts included in the section which follows, however, were classified as inflight thoughts for three main reasons. First, they met the criteria specified in the stage one guidelines. Second, they related to an instructional choice which had either been made or was about

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to be made and could thus be considered to be part of the thinking involved in that choice. Often, in addition to being reports of inflight thoughts relating to a teaching technique, they could be interpreted as statements of intention: "I'm trying to ... " or "I want to .... " Finally, they were included because when questioned, Lysander asserted that they were, in fact, thoughts which had occurred to her during the lesson.

Passing reference was made to a variety of different teaching techniques. Four techniques, however, were featured in Lysander's thoughts on several occasions and seemed to be most typical of the explicit teaching characteristic: Drawing them out, making connections, facilitating comfort and success, and reinforcing.

Drawing them out. In the first of these, drawing them out, Lysander's inflight thoughts indicated a desire for the students to actively engage or participate in the lesson. "I'll try and be a bit of the devil's advocate", she thought as she presented, to the students, a point of view which she anticipated might provoke a response. Similarly, when directing a question to an individual student, she thought, "I'm trying to be provocative again with him ... I want to draw him out." These inflight thoughts suggested a motive which was not necessarily concerned with arriving at a "correct" answer. Her thought, " . . . doesn't really matter what they say just as long as they're thinking about it," helped to explain that Lysander was motivated here by a desire for students to think. This tended to be confirmed by examples in which Lysander's technique of allowing time for students to formulate an answer was accompanied by the inflight thoughts such as: " ... give her some time to think and develop her idea a bit more," and, " ... giving them time to think ... to change their mind."

Making connections. Making connections was another teaching technique to which explicit reference was made in Lysander's inflight thoughts. In these thoughts, she revealed her desire to create linkages between different types of learning experiences. The class was going on an excursion to a National Park a short time after this interview, and connections between this excursion and classroom learning were evident: "I'm also trying to link up the work they've done with what they're going to experience on the excursion," and "I'll use these local examples so then they can think, 'I know what a National Park looks like ... '." But, in Lysander's thoughts, reference was also made to connections between classroom learning and other learning experiences in the school: "I'll come back to shared experiences that they've all had, out there in the Agriculture plot."

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An underlying purpose for the making of these connections appeared to be for students to link new and prior knowledge, to be able to relate new learning to existing knowledge: "things that they know ... they can relate back to."

Facilitating comfort and success. In Lysander's inflight thoughts, reference was also made to the facilitation of comfort and success as a deliberate and explicit teaching technique. During a class discussion, she asked the students to choose between two alternatives. For those who did not express a choice, Lysander proposed a third alternative and described it as a reasonable and sensible option; withhold judgement until the excursion and decide then. As she proposed this alternative, she thought, "I'm trying to make those people who didn't have an answer feel comfortable." In another example, directed this time at an individual student, Lysander rephrased a question and thought, "I'm couching the question in a way that she can give a quite competent answer." Here Lysander's inflight thoughts indicated an awareness of an explicit teaching technique which she was using to achieve a certain goal.

The facilitation of success was also featured in Lysander's inflight thought. Lysander's decision to extend a class discussion was based on an awareness that some students in the class had not yet completed the writing task set as the class commenced: "I'm extending the discussion ... longer than what I anticipated ... But I don't want them to feel rushed either ... it's better to complete something than to leave it." Without revealing any thoughts about the individual students who were still writing, Lysander noted, "I'm modifying the lesson to suit the needs of the kids."

Reinforcing. A final teaching technique, typical of this explicit teaching characteristic, was the use of reinforcing. Reinforcement was used to refer to a teaching activity, not in the behaviourist sense of a particular consequence given for a desired response. In Lysander's thoughts, she mentioned using this technique for consolidating new learning as well as drawing the attention of students to salient features of a lesson: "I'll put some words on the board so the kids can look up and reinforce what's been talked about," and "All right, reinforce it again, 'cause it was so hard to get it out of them." Sometimes this reinforcement was done by verbally repeating an aspect of a lesson; at other times, it was done by presenting an aspect of a lesson in a different form: "Put it on the board, then they can 'immerse'." Implicit, in the use of reinforcing as an explicit teaching technique, was the notion that some features of the lesson needed to be

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reinforced whereas others did not. It appeared that two criteria, possibly overlapping, were being used: a) The aspect of the lesson to be reinforced was right or correct: "I'm going to reinforce the right answer," and b) the aspect of the lesson to be reinforced was consistent with the wishes of the teacher: "I'm going to say the numbers, to reinforce the way I want them to do it."

Characteristic Four - Lesson Thinking

Lesson thinking was a characteristic of Lysander's inflight thoughts, which involved either explicit or inferred reference to the content of past, present or future lessons. Within this characteristic were described inflight thoughts which were related to the subject of lessons, rather than the way in which those lessons were conducted.

It was interesting to note that inflight thoughts did not include any reference to the planned content of the lesson. It may be presumed that, had Lysander been asked prior to the lesson, she could have listed the concepts and activities which she wished to address during that lesson. During the lesson, however, there was no reference to that list of content evident in Lysander's inflight thoughts. It was possible that during the lesson Lysander was not thinking about her prior intentions at all. It was also possible, however, that consideration of a general intention for the lesson had been happening at a less conscious level and was, hence, not readily available for recall in the subsequent interview.

Inflight thoughts relating to "spontaneous lesson content" were quite common occurrences. The presence of these thoughts about lesson content, which arose as the lesson progressed, and the fact that Lysander, in those thoughts, acknowledged their spontaneous nature, suggests that they stand in contrast to a different plan for the lesson. This different plan, reflecting Lysander's original intention for the lesson, may only be inferred by the degree to which subsequent lesson content was understood to deviate from that plan.

An illustration of this could be seen in an inflight thought which occurred as Lysander began explaining a concept which had come up during a class activity: "I'm now going on to develop the point that's coming up as a result of that summary ... which I wasn't going to talk about." This thought implied that "the point," which may be described as spontaneous lesson content, was an elaboration of the original content that Lysander had not intended including. In the thought, "him coming forward with all this

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information ... disclosure ... it's good, handy to the lesson," the spontaneous content appeared to be a useful supplementary example rather than an elaboration of a concept.

Spontaneous lesson content was often in the form of supplementary examples. The generation of these examples appeared to be according to the experiences of the students: "I'm coming back to shared experiences ... in this room." While, in this case, Lysander's thoughts reflected an intention to illustrate a general principle by a specific example, the reverse situation sometimes occurred: "Now I have to take it from experience they have to a global situation." Here the spontaneous lesson content being generated was an attempt to move from a specific example to a more general principle.

In summary, it appeared that while thoughts relating to lesson content were a characteristic of Lysander's inflight thinking, these thoughts were usually concerned with examples. Concepts which were the focus of the lesson were not featured in inflight thoughts. The spontaneous generation of examples which could help to illustrate or explain those concepts was a feature of those thoughts.

Summary of Characteristics

In the preceding section, Denise's inflight thinking has been explored and described. Four main characteristics emerged from this exploration which seemed to summarize the essence of this inflight thought. These characteristics were a) instinctive teaching, b) "no problem," c) explicit teaching, and d) lesson thinking. These characteristics have been individually described and analyzed, their salient features noted.

Throughout this section, the focus of the exploration has been on the inflight thoughts themselves. In the section that follows, possible relationships are examined, which exist between these inflight thoughts and the guiding principles identified earlier in this chapter.

Relationships between Guiding Principles and Inflight Thinking

In this section, relationships between Lysander's guiding principles and her inflight thinking shall be explored. Guiding principles discussed earlier in this chapter shall be used as a basis for this exploration.

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As with the other case studies, examination of relationships between guiding principles and inflight thinking seemed to provide a more comprehensive understanding of Lysander than would examination of any one aspect in isolation.

Early in the semistructured interviews, Lysander discussed, at some length, her assertions about the importance of support for teachers. She summarised this discussion by commenting that teaching was a people job and suggesting that the provision of support by a school for its teachers made more likely the provision of support for students by those teachers. These assertions about the importance of support were not, however, reflected in Lysander's inflight thought. Although she did, in various ways, provide support for student learning, this was not reported in inflight thought. It appeared that, while this was identified as an assertion about learning and teaching, it was not explicitly operating as a guiding principle. It is possible that this assertion may have been influencing thought at a subconscious level and therefore not available for report in stimulated recall interview. Nevertheless, had this been the case, it could be expected that inflight thoughts would have revealed at least a tendency to perceive the teacher's role as a supporter of learning. This tendency was not evident.

This may be interpreted as a difference between thinking which related to a specific lesson or learning situation, and thinking which related to the profession of teaching more generally. The absence of these assertions in inflight thinking may be an example of two different aspects of Lysander: in the specific instance, she is Lysander the teacher interacting with students; in the second, more general instance, she is Lysander the teacher standing apart from the class, interacting with another professional and advocating for the teaching profession.

A Positive Environment

Provision of a positive educational environment was the guiding principle most clearly evident in Lysander's inflight thought. This principle had been described in terms of providing an environment in which students were relaxed, felt secure and were prepared to have a go. It was noted that in such an environment students are motivated to do well. Further, Lysander acknowledged that in such an environment she felt relaxed. The operation of this principle can be seen in several characteristics of Lysander's inflight thinking.

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Instinctive teaching, those thoughts relating to teaching characteristics but not identified as such, contained many instances of this. Personal responses described in terms of "reactive teaching" seemed to reflect a desire to create a positive environment for herself and for the students. Avoiding potentially negative responses, Lysander's inflight thoughts tended to focus on feelings of relief and pleasure when students could provide appropriate answers. Choosing not to act was another feature of reactive teaching thoughts, which could be explained in terms of a positive educational environment. Here, Lysander appeared to be choosing a course of action (or inaction) which could be justified as a deliberate effort to avoid potential difficulties.

This tendency to avoid potential difficulties was seen most clearly in inflight thoughts characterised as "no problem". These thoughts, relating to both Lysander and the students, referred to the avoidance of stress and worry. The principle of providing a positive educational environment may be understood to be guiding these inflight thoughts. Being personally comfortable was reported on several occasions. It was not clear whether these thoughts revealed Lysander's use of a deliberate strategy, in which a positive environment is created by telling herself that no problems existed. It might be supposed that, in this situation, a positive and relaxed environment was, in the first instance, an internal construction of Lysander's. By her relaxed manner, however, the optimal situation, in which all members of the class felt relaxed and free from stress, became a reality.

Occasionally, reference was made in Lysander's inflight thoughts to her own more direct intervention in reducing student stress or worry. As well as teaching new concepts, the motivation for some of Lysander's thoughts and actions appeared to be avoidance of stress and hassle. The guiding principle of creating a positive educational environment in these situations seemed more pervasive than other principles, such as assisting students to construct new knowledge.

In addition to thoughts characterised as instinctive teaching, explicit teaching appeared to be guided by the principle of creating a positive educational environment. In this regard, aspects of a positive environment, apart from personal comfort, appeared to be featured. Reference was made to "drawing them out," and to other explicit techniques in which students would express an opinion and actively engage in the lesson. There was a direct correlation between this and Lysander's earlier description of a positive educational environment as a place in which students have a go.

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A similar goal, students engaging in the lesson, was articulated in this guiding principle and in related inflight thinking. On further examination of these elements, though, it appeared that a classroom, in which students felt comfortable, was only one aspect of a positive educational environment. Lysander acknowledged both in her guiding principle and in her inflight thinking, that direct teacher intervention was also necessary if students were to become actively involved. The relative importance of these aspects varied slightly between semistructured and stimulated recall interviews. In articulating principles prior to the lesson, provision of a comfortable environment for students appeared to be favoured. Inflight thoughts, however, revealed more attention being directed to the role of direct teacher intervention.

Definition of a positive education environment must include reference to the individuals in that environment; positive for whom? The relationship between Lysander's guiding principles and inflight thinking, with reference to the students, has been discussed. In addition to these interpretations it has also been noted, and is apparent from Lysander's earlier discussions of her own preferred way of working, that avoidance of personal stress could be described as an additional principle which guides much of Lysander's thinking.

Accepting Responsibility

In describing the guiding principle of being appropriately responsible, Lysander made clear that this related to both teachers and students. Student responsibility, however, was not as evident in inflight thinking as was responsibility of the teacher. In one of the semistructured interviews, reported earlier, Lysander explained that the main responsibility of students was to indicate to the teacher a desire to learn and, if necessary, a need for assistance. It could be expected from this that, in Lysander's inflight thinking, there might be some reference to ways in which students were indicating need, or to teaching techniques designed to increase student responsibility. This was not the case. Inflight thoughts have been discussed within the explicit teaching characterisation in which Lysander attempted to make students think. These could be interpreted as an attempt to increase the degree to which students took responsibility for their own learning, and, hence, evidence of the being responsible principle in operation. It appeared, though, that students thinking about the lesson content and student responsibility for their own learning were not considered in the same way.

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Responsibility of the teacher was a feature of Lysander's inflight thoughts. It was evident in several examples, that this principle was guiding her thinking as the lesson progressed. Inflight thoughts, characterised by their attention to reactive teaching, contained reference to the teacher taking control; to the classroom as 'my room', and to students doing what she wanted them to do. There appeared to be a clear understanding of the responsibility of the teacher in relation to the operation of the lesson. The teacher's responsibility also extended to the monitoring and evaluation of student learning. Mention has already been made of the comparison of student responses to some implied standards. While it was not clear whether Lysander considered setting these standards is the teacher's responsibility, it was clear that the monitoring and evaluation of student progress was considered in this way. Lysander seemed to consider herself responsible for not only the content being learned but also the processes used by students to demonstrate their knowledge: " . . . the way I want them to."

An aspect of personal responsibility, discussed in some detail in the semistructured interviews, related to the limits of responsibility and the concept of comfort within those limits. It appeared clear that, while Lysander in her inflight thinking took responsibility for virtually all aspects of the lesson, her no problems references were indicating that she was taking responsibility only for things within comfortable limits. In a sense, consciously thinking that there were no problems may have been operating as a mechanism to define limits of personal responsibility. Had inflight thoughts revealed acknowledgement of a problem, this may have been a signal that those limits had been reached and that either the limits needed to be extended or responsibility placed elsewhere; with the students, for example.

System and Order

Although clearly articulated by Lysander, the guiding principle of system and order was not immediately apparent in inflight thought. Obviously formal and ordered aspects of the lesson, such as standing to greet the teacher, were not referred to in stimulated recall. This suggests that the operation of these routines and rituals had been automated, for Lysander, and did not form a part of her conscious consideration of the lesson.

While inflight thinking, relating to these particular actions, was not evident, thoughts relating to an orderly and systematic way of teaching were. Lysander had, in

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describing this principle, explained the importance of making complicated issues more simple by creating ways that might help students to remember. "Making connections," an explicit teaching technique referred to in Lysander's inflight thoughts, could be interpreted as an example of this principle in operation. Lysander frequently made reference to the linking of class work with students' prior experiences and with future learning experiences such as class excursions.

Inflight thinking, characterised as reactive teaching, also indicated the importance of standards in the evaluation of learning. Although not made explicit, Lysander's teaching seemed to have been made more orderly by the existence of standards against which progress could be evaluated. More explicit was the use of reinforcement at strategic points throughout the lesson. Lysander's inflight thinking revealed that, once certain concepts had been presented, those concepts were deliberately reinforced. A choice to reinforce some concepts and not others suggested the existence of a plan for the lesson. It also suggested a personal understanding of the salient and significant features of the lesson content (Sweller, 1991) which, although not always a part of inflight thinking, helped Lysander structure the learning in a systematic and orderly fashion. The guiding principle of being systematic and orderly appeared to be quite pervasive in that, while it could be seen in inflight thinking, its operation at a more subconscious level could also be inferred.

This appeared to contrast, to some extent, with the considerable attention paid, in inflight thinking, to spontaneous lesson content. It could be supposed that an orderly approach to teaching and learning might include preparation of a plan for the lesson, to which the teacher would tend to adhere despite the emergence of incidental issues. As has been noted in the earlier analysis of spontaneous lesson thinking, however, this thinking was taking place as the lesson progressed and therefore immediately accessible for recall. It was not surprising that it was evident in Lysander's inflight thought. Planned lesson content, on the other hand, would more likely be considered at a more subconscious level and, hence, not as conspicuous in inflight thought. Indications of thinking about spontaneous lesson content did not, therefore, necessarily reflect their greater or lesser importance when compared with more planned lesson content. Lysander's use of supplementary examples, which clarified predetermined issues, was consistent with her orderly and systematic approach to teaching.

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Clarifying Expectations

Prior to the lesson, Lysander described how, in making clear her expectations for the students, she was making it more likely that those expectations would be met. As a guiding principle, it seemed that this making clear of expectations was both a goal for instruction and a means for achieving that goal. In its operation, this principle had many similarities with the principle of being responsible. Although, in her earlier description, this principle referred to expectations of both teachers and students, in Lysander's inflight thinking it related mainly to expectations which the teacher had of the students. There was no reference made to others' expectations of Lysander as the teacher.

The stating of goals, an aspect of the instinctive teaching characteristic, was one way in which the operation of the principle of making expectations clear could be seen. While inflight thoughts revealed consideration of goals and, hence, expectations of the students, however, no reference was made in those thoughts to the explanation of those goals to the students. Similarly, when evaluating students' progress, it could be seen that, although Lysander had certain expectations of those students which were clear to her, inflight thoughts did not contain reference to any action which would have made those expectations clear to the students. One explanation for this situation was that Lysander had, on occasions prior to the target lesson, made clear her expectations of the students and that she was confident these expectations were understood. If this were the case, there might be no need for her expectations to be considered during subsequent lessons, those expectations would now be part of a subconscious framework for teaching.

One instance, where inflight thoughts related directly to the making clear of expectations, occurred in connection with a practical demonstration. This thought has been considered as an example of thinking characterised as "no problem." In this example, Lysander showed the students what she wanted them to do and acknowledged that one reason for this was to make clear what they were expected to do. As has already been observed, however, the desire for avoiding a potentially troublesome situation may have been more influential in this example, than a principle of making expectations clear.

In general, the relationship between the guiding principle of making expectations clear, and of inflight thinking, was strictly limited. In terms of rituals and routines, Lysander had, as she explained in semistructured interviews, clear expectations of the students. These expectations were not evident in the inflight thinking during this lesson.

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Nor were other expectations of Lysander in relation to the students which were articulated prior to the lesson, such as being on task and being ready to work, as seen in her inflight thoughts. It must be assumed that, if making expectations clear was a guiding principle for Lysander's teaching, it took places in lessons other than that observed. While absence of reference to expectations in Lysander's inflight thoughts does not mean that no expectations existed, it does suggest that the clarification of those expectations for the students is not a feature of her inflight thinking.

Instruction and Ability

Two principles were described by Lysander as having particular relevance to her teaching in an inclusive classroom. The first of these was matching instruction to student ability; raising the standard and the pace of instruction for more able students, slowing the pace for less able students, and pitching instruction towards the middle for a mixed ability class.

Lysander had identified the target class as one in which inclusive education was taking place. This, she explained, was another way of saying that the classroom was ungraded or that there was a mix of student abilities in that class. Interestingly, however, in Lysander's inflight thoughts ability of individual students was rarely acknowledged. She did generate different explanations if she felt that a concept was not being readily understood, but without specific reference to individual students. From this, it may be supposed that decisions to give new explanations or additional examples are made on the basis of factors other than the characteristics of individual students. These factors, though, were not made clear in Lysander's inflight thoughts. One instance of an inflight thought which did relate to differing rates of student performance, has been reported within the explicit teaching characteristic. As an example of the facilitation of personal success, Lysander's inflight thoughts revealed a deliberate decision to allow more time for some students to complete a written assignment in class. Reference was not made, in this thought, to individual students, but a general awareness of differing ability is implied.

Although explicitly referred to in this one example, the matching of instruction to student ability generally seemed to be taking place at a level of thought not readily available for recall. A further indication that this may have been taking place could be seen in the relatively common use of predictions described as an instinctive teaching

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characteristic. Lysander's predictions about the thoughts and actions of individuals and groups of students, seems based on some knowledge of those students and their characteristics. Despite this, connections between predictions, and the matching of instruction to ability described as a guiding principle, seem limited.

Being Direct and Honest

The other principle, referred to as having particular relevance to inclusive education, was that of being direct and honest; giving students realistic feedback about their progress, helping students understand their own limitations. This principle was not seen in Lysander's inflight thought. Although identified as a guiding principle, particularly in relation to the teaching of mixed ability or inclusive classrooms, it did not appear to be operating to any significant extent in the target lesson. This may have been because of the nature of the lesson, being mainly concerned with giving explanations. Lysander did, on several occasions, respond to student statements, and there was no suggestion in these responses that she was being anything less than honest. Inflight thoughts, however, did not include reference to this as a guiding principle nor indicate an awareness of honesty or directness.

In summarising relationships between Lysander's inflight thoughts and the principles guiding her teaching, several observations could be made. All the characteristics of inflight thoughts could be seen to be, in some way, related to at least one of these guiding principles. At times, however, this relationship was somewhat tenuous. The principle of creating a positive environment appeared to be particularly influential in guiding several characteristics of Lysander's inflight thinking, particularly those relating to instinctive teaching and no problems. The guiding effect of the principle of being direct and honest, on the other hand, could not be observed in Lysander's inflight thinking.

For other guiding principles there appeared to be some difference in emphasis between the initial articulation of those principles and their influence on thinking, which took place as Lysander was teaching. On examination of the guiding principle of system and order, for example, it seemed that, while observable aspects of an ordered classroom referred to in semistructured interview did not feature in inflight thinking, generation of explanations and examples to facilitate a systematic approach to learning was evident. Similarly, the principle of being responsible, as it was enacted in inflight thinking, related

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mainly to the role of the teacher as a figure of authority in the classroom, whereas, prior to the lesson, this principle also included reference to the responsibilities of students. The influence of the principle of making expectations clear was difficult to detect. A characteristic of Lysander's inflight thinking was to make implicit references to expectations of the students which were not then clarified for the students. A possible explanation for this was that, at some earlier time, those expectations had been made explicit.

The principle of matching instruction to students' ability was, again, implied, rather than made explicit in inflight thought. Predictions about student action and thought could be interpreted as being made on the basis of an understanding about the ability of those students. Nevertheless there was little evidence in inflight thought of a deliberate attempt to modify instruction on the basis of that understanding.

Chapter Summary

In this chapter, the thinking of an experienced teacher, Lysander, has been presented and examined. Lysander introduced herself and presented contextual information about herself and her approach to teaching. Principles which guided her teaching were then defined and analysed.

A description of the context for instruction was followed by an analysis of the nature of Lysander's inflight thinking. In this analysis, four main characteristics were identified: Instinctive teaching, no problem, explicit teaching, and lesson thinking. It was noted that, in many cases, inflight thoughts exemplifying any one of these characteristics could simultaneously exemplify another. Nevertheless, these four characteristics were sufficiently distinctive to warrant separate investigation.

In the final section, relationships between Lysander's inflight thinking and her guiding principles were examined. In this examination, differences between espoused principles and characteristics of inflight thought were identified. Similarities between guiding principles and inflight thinking, examples of thought in which the influence of one of these guiding principles could be recognised, were also identified. The creation of a positive educational environment appeared to be one guiding principle which was particularly influential in Lysander's inflight thinking.

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CHAPTER SEVEN

Case Study Four- Max

This chapter, the fourth in the series of case studies, follows the same format as the preceding chapters and is divided into four main sections: a) An examination of the participating teacher, b) information about the context in which she is teaching, c) description and analysis of the teacher's inflight thinking, and d) an exploration of relationships between the teacher's guiding principles and inflight thinking.

The focus of this case study is the participant known as Max. Max teaches science in the junior high school section of a western Canadian elementary/junior high school in the same city as Laurie (discussed in chapter four). Max is passionate about science and appeared to enjoy talking about this subject and his teaching of it. At the time of these interviews, he had been teaching for approximately seven years, the last four in this school.

The Teacher

In the section that follows, Max introduces himself and provides some insights into his life and his teaching. The words used in this section are those of Max, compiled from transcripts of semistructured interviews or from researcher fieldnotes.

Focussed Life History

> A personal profile. My name is Max. I teach in the junior high section of a Catholic elementary/junior high school in a city in western Canada. I teach science to grades seven and nine and maths to grade eight.
>
> From high school I went through the Science faculty at the university, I was going to get my B.Sc. and I specialized in math, physics, chemistry and economics. Originally I wanted to be a chemist and then I heard that the average age [life expectancy] of a chemist was 52. I said, "Wait a second here! 52 years old! No, I think I want to live a little longer than 52!" That wasn't the only reason for my decision to go into teaching, I'd been thinking about education, but

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after my fourth year I had obtained my B.Sc. and entered the after-degree program in education. I did two years of training there and my major was math and physics/chemistry. I've always enjoyed the high school level of physics and chemistry and stuff like that, so when I went into the Education faculty, I entered under the math program as a major and a minor would be physical science. I like kids but my strengths, as far as I was concerned, lay in the junior high and senior high areas so I bypassed the elementary.

After university I had some loans to pay back so I started subbing[8] a little. I got an offer of subbing for the special ed. class at one of the large Catholic high schools. The teacher had gone on leave and the principal asked whether or not I was interested in taking the position. I said, "Well, wait a second! That's not my background." But then I thought about it and I had subbed there a couple of times and I kind of enjoyed myself. So I had the EE1 class.

I had three aides working with me and there were seven students ranging from 13 to 16 years old and there was a whole range [of abilities]; some autistic students, and some with cerebral palsy. This was a self-contained class, they spent all their time pretty well with myself or the aides. I'd set up their time table and program and then we'd do various things with the students and we'd rotate through, so you wouldn't have the same student the whole day. So that was kind of interesting. The principal asked whether I wanted to continue with this program the following year and I said no. You know, it was a great experience and I had nothing against the kids or the aides or anything like that, but I felt my forte was in the high school math - - physics/chemistry and stuff like that. I've always wanted to be a high school teacher, always wanted to be.

So I turned down the position and in the fall I was back on the sub list for about three weeks. Then I managed to get a position over at a junior high school not too far from here. There was a range of courses I was doing; language arts, outdoor education, science, math, and health. Most of my prep time was with the language arts. The language arts was really tough for me. With the math and the science I had some background so I was familiar with the program but the

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8 Subbing. Working as a substitute teacher on a casual, usually daily, basis.

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language arts, "Aiee, aiee, aiee!" It was a one year contract and I was covering for somebody that went on leave, so the position was over at the end of June.

The following September the principal here at St. Philomena gave me a call. He said he had a full-time math position. "But," he said, "it's not a full-time contract. Your job would terminate when the teacher returns." Well it so happens that I ended up for the full year and I just continued here: this will be my fifth year.

I've been primarily teaching the regular program all the way through. One year I was teaching grade seven IOP[9] math but I would describe myself as a regular teacher in the sense that I was teaching a majority of regular classes. My first three years at this school were pretty well math and then, last year, I said to the vice principal, "Gee, I'd be willing to pick up some of the science." Well, some of the science meant pretty well all the science! I didn't mind it at all, it was a lot of fun. And I think I needed a change too, I was becoming a little bit stagnant and I needed a little more variety.

I recently took leave and it was the best thing I ever did - - to get that balance back. One fault of mine is that I sometimes take things too seriously - - I take them to heart. And especially the kids, I really push for the kids in the school. And it seemed to me that over the last couple of years anything that I would do for these students wasn't really being followed up with and I felt that I wasn't getting that support from the administrators here at the school. I wasn't a happy camper and I'd really lost a lot of balance in my life. I had a new family and school to contend with and the students so there was really no happy medium there. As a result my head was kind of spinning, I was suffering from stress and I decided the best thing for me to do was to take some time off. So I took three months off for myself and for my mental health.

Since I've returned, I have a total different outlook on my teaching career. I came back just before Christmas holidays and it's been smooth, really smooth. Since January I've learned to laugh and I don't take things to heart. I deal with things and let things go that wouldn't make a difference in my life or a student's life.

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9 Integrated Occupational Program (IOP). Vocationally oriented program for students with mild intellectual delay.

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What makes it all worthwhile? Well, I can't say one thing, but it happens on a daily basis when you know the kids have caught onto something. When they walk out of the classroom feeling good, I feel good and that's what keeps me going. I mean, I'm going to have lousy days here and there like everybody else, but when the good days outweigh the bad days, you know you've done something for those kids. Knowing that they've picked something up from you, passing some of this information off to them and them responding well to it. And when they do well on exams or something simple like that. If you can get the class working with you, and they're feeling good and following along, it just makes my day.

Teaching information. I've been asked to describe some of the things I do as I teach 9C.

I do a variety of things in the classroom. Instead of just sitting in front of the overhead or sitting at the board, I like moving around in the classroom. Instead of being really stale in the classroom and just teaching straight out of the book, I get them active in the classroom.

The class starts with a quick little review. A lot of it will be question-type things, materials that we may have covered the day before. Then I may start with a quick little demonstration of some sort; just to kind of get their minds focussed on what they've already done, and set them up for what to expect.

And then, I'll probably go to the board and ask them to take out their notes, and I'll do some notes on the board, and we'll do a few examples. I'll question as we go. I like stopping them. I like when the kids stop me and ask questions. Some of them are a little bit off topic but that's easily handled. But it just gets everybody going and you can hear their ears prick right up there.

As I'm explaining, I might throw a principle up on the board and put it down and explain in words, and then I'll go and grab something to demonstrate this principle. As they're writing I'll continue to explain and, in that time, I'm walking over and say, "OK, now everybody turn your attention to the back of the room here and I'll demonstrate."

This is a diverse group of students and most of the times the main things I do in class are prepared. Generally, when I plan a demonstration to show off some type of concept, I'll have a couple of ideas in my mind. But I've always got

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in the back of my mind, "what else can I do in the heat of the moment, in order to demonstrate differently to catch some of those students that still don't understand?" So, I would say a lot of the times in that room I'm thinking on my feet: "OK, if they don't understand this, what about this?" Hopefully I've got stuff handy! I'm always running around in that room saying, "Just hang on guys, just hang on a second," and I'll run and I'll grab something and pull it out and say, "Well, take a look at this!" It comes from experience. It comes through my observations from the years of figuring out what to do.

I question them too. And by questioning them, it kind of gets the people that really don't understand. They're listening, not to me, but now they're listening to their peers. And, as a result of them listening to their peers, they say, "Hey! maybe it's not so bad after all to ask a question or two." All of a sudden they start answering these questions and I'll look at them and ask them something that I think they may have caught on to, just to give them that little boost, that little bit of self-esteem. And it could be the simplest thing. You do that once, you do that twice, you do it three times, and next thing you know, you've got these lower-end kids wanting to be involved in the classroom discussion; wanting to try demonstrating to you, wanting to do lab work.

I spend time with them after school and I really encourage them. My way of teaching in the classroom is that, if you ask questions and you want to come after school, I will be here for you but you have to follow the general expectations of the room. Number one is to keep on top of what's going on. If you miss school, make sure that you catch up. You ask questions in the room as well when you're having these difficulties. You meet those two criteria and the door's open to you. I have a group of grade nine students right now coming on a regular basis after school. Now they're asking the questions, now they come after school. Yesterday was the final kind of review I did with them and they know what's going on.

There's a time and a place for a lecture style and there's also a time and a place for these demos. I think everybody benefits from it. Some of the upper end kids; I can explain it to them, they can read it out of their notes, out of the textbooks and they understand it and they can explain it to me fully. When I probe and question to see whether or not they really understand it they're right on line.

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Then you have the middle of the road group of students that can read it, they understand what they're reading but they just need something else to kind of convince them of it, so that one or two demos is great.

And then we have the lower end and that's where, the more demos you do with them, the more diverse you are in your presentation, the easier it is for them to catch on. When I'm going through it I question the students that have already caught on as well, so they just don't sit in the classroom saying, "Yup, yeah, I understand, let's move on, what's our homework assignment?"

I'm concerned about time. I have a pace to maintain with the students and, in particular, with the grade nines. They're going to have a pace next year[10] and I like to maintain a rigid pace. This year I have a lower end class and some of the things I did with the upper class last year, that enrichment material, I just don't have the time for. So I'll cover the basics, what they need to know, and whenever I can I'll try to sneak something in.

Everybody's pressed for time at the end of the year but it's not in the back of my mind all the time. I've got to work at their pace. I try to develop the lessons so that I am covering the material at their pace, and, so if it does take me a few more minutes to explain something, great. But I still have to keep that in context."

Guiding Principles

Having heard him provide some biographical information and describe some details of the experience of teaching, the case study now turns to some exploration of the principles which appeared to guide Max's teaching. These principles were derived from the transcripts of semistructured interviews.

About teaching in general. From an analysis of semistructured interviews, three principles emerged, which appeared to guide Max's teaching in general: a) Looking for understanding, b) expectations and responsibilities, and c) students as whole people. In addition, there were two principles which Max identified as having particular relevance to his teaching in an inclusive classroom setting: a) Everyone should get the basics, and b)

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10 Students begin their senior high school program in grade 10.

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push them to the limits of their ability. There are, therefore, five principles described in the following section.

Looking for understanding was a principle which was frequently referred to by Max during his description of his teaching: "I look for understanding. If I have to spend three days on something to get it there, I'll spend it. I look for understanding." In this he was referring to student understanding of the concepts which were being presented during his lessons. It was clear that understanding meant more than a simple regurgitation of facts, but included a deep and personal construction of meaning by the student, which could be expressed in a variety of ways.

Max discussed the difference between rote memorisation of concepts and understanding of those concepts, taking the student's perspective: "I can read the words and I can take this definition and I can write it down on the exam. It's easy for me to memorise it. But what *exactly* is it?" He went on to elaborate on this distinction: "That's what I'm trying to get them to think; 'what exactly are these principles stating?'"

There were several different ways in which this general principle of looking for understanding was made apparent; all relating to teaching methods but all clearly expressions of Max's desire to increase student understanding. The first of these methods was the importance of knowing one's materials. When asked to suggest a piece of advice which might be useful for other teachers in similar situations, Max stated, "They should know their materials." "Materials" in this context meant the content which was to be taught, the curriculum material. In Max's case, the instructional content was science, and his personal interest in the subject and knowledge acquired as an undergraduate were evident throughout our interviews.

As further evidence of the importance of knowing the material being taught, Max explained that, if a student asked him a question, he would try not to say that he was unsure about the answer or that he would "get back to" them: "You try to avoid that at all times." Having said that, however, he acknowledged the inevitability of uncertainty in the teaching process: "I've been stumbled a few times and it's just, 'Hang on guys, give me a second. I've got to sit down and think about this.'" Max justified this situation by noting that, "I think if you admit that you're having difficulties, that makes you human. If you try to snow them they can read right through [you] and you lose a little bit of respect from them." He explained how, even though he avoids admitting uncertainty about a content-related matter, such an admission may have some benefits for relationships between teacher and students. There were no suggestions in Max's explanation that there

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would be any direct advantage for student understanding of a teacher admitting uncertainty.

Another illustration of the general principle of looking for understanding was Max's emphasis on variety and activity. These two issues were interrelated; the provision of variety in instructional activities was equated with increased student engagement in cognitive or physical activity. In short, increased variety meant, for Max, increased activity. In his explanations, Max was mostly referring to activity of the students, but his own physical activity in the classroom could also be seen as an example of this principle. The relationship between activity of a cognitive and physical nature and learning or understanding was explained by Max in the following manner: "I think a lot of the students learn by seeing and they learn by doing ... and by doing these demos they get that understanding." "They're active learners," he stated in an observation which appeared to relate as much to characteristics of the students as to his preferred modes of instruction. Max's understanding of the relationship between variety and his own physical activity could also be seen in his explanation of his teaching style: "I try to do a variety of things in the classroom instead of just kind of sitting in front of the overhead or sitting at the board. I like moving around in the classroom."

Max acknowledged, however, that, at times, there were benefits to methods of instruction which involved less physical activity from the students: "it works where you have to sit down and the kids have to take some notes down. But," he added, "I try to make it fun for them." He explained that, in general, though, getting the students involved and active was an important aspect of increasing student understanding: "Just kind of get them active in the classroom. I encourage that as much as possible."

The main purpose of both activity and variety for the students and for himself appeared to be to increasing understanding. Variety in methods of instruction meant that students would be engaged in both deskwork and practical demonstrations. For himself, as teacher, variety meant that he would sometimes teach from the chalkboard or overhead projector but also be engaged in practical demonstrations. Further, to enhance understanding he would provide multiple examples and demonstrations of each concept. An element of physical activity appeared, therefore, to be an aspect of varied instruction. Variety, in turn, was seen by Max to be an essential aspect of the principle of looking for understanding: "I've always got, in the back of my mind, 'what else can I do?' ... in order to demonstrate differently to catch some of those students that still don't understand."

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An incident described by Max exemplifies the way that looking for understanding, as a guiding principle, was seen to be facilitated by variety in instruction. Following an explanation of a scientific concept, he had provided, for the class, two examples of the way this concept could be seen in operation. He then encouraged the students to think of another example which he followed up with another of his own. He laughed as he described how finally he had ended up explaining this concept seven different ways with seven different examples: "By the end I said, 'Wait a second, I think I've got another one!' They said, 'OK, we already understand!'" In concluding his description of this incident, Max noted that, when he reviewed material for exams, he would then ask the students to go back in their memory: "I'll say, 'Do you remember, when I explained this concept I used those three different demos? So when you're writing your exam just try to think back of what I did and how I explained it or how you explained it to me.'"

On the other hand, while variety was an explicit element in this description of a teaching incident, an implicit element was that of cognitive activity. Max recognised that student generation of examples is a powerful means of increasing individual understanding and demonstrating that understanding: "In exams I try to get them not only just to state the principle but try to explain it in their own way." Further, this description implies that Max had an appreciation that students learn in different ways and that a single explanation may be insufficient to facilitate understanding for all students.

Another method used by Max in this search for understanding could be seen in the emphasis he placed on the value of examples and demonstrations: "By using these different types of examples and demos in the classroom, hopefully they get understanding." His role as teacher appeared to generate sufficient meaningful illustrations of each concept so that the students would be able to recognize the key aspects of that concept. His teaching was guided by a principle of looking for understanding, in which, rather than relying only on his own ability to explain, he could provide effective demonstrations which had explanatory power of their own.

In examination of this aspect of his guiding principles, there was reference to the importance of knowing the materials, discussed earlier. He commented that "It's definitely an asset to have that strong background. If you don't have a strong background you have to spend the time looking for different ideas." This was not surprising, given that generating effective demonstrations was such a significant aspect of Max's teaching.

A final aspect of this guiding principle was the importance of making it real. Implicit in the word real was a relevance beyond the unreal context of the classroom into

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the students' broader environment. Relevance of the concepts which were being taught in the classroom was seen to be a critical aspect of student understanding. Max noted that "If you can get them to understand that there is a purpose there, outside of the classroom, they just get more of an appreciation for it. And they see a reason behind what they're doing." There seemed to be two issues associated with this desire to make it real. The first related to student motivation; students would be more likely to engage in classroom activities if they could see a reason for doing them. The second related more to individual understanding; connecting classroom learning with personal experiences would be likely to facilitate that understanding.

A second principle, which appeared to guide Max's teaching, was that of expectations and responsibilities. These were considered to be one principle as each seemed dependent on the other. Max had some clearly articulated expectations of the students as learners in his classroom. The students, on the other hand, were understood to have certain individual responsibilities as learners. Max's expectation of the students was that they would take responsibility for certain aspects of their own learning. There was no explicit reference to the reverse of this situation; that, as teacher, Max may have had certain responsibilities and that the students may have had expectations of him. Rather, this was implied in a form of an unspoken contract which he understood to exist within the classroom.

Max identified his two expectations. The first was that students are expected to "keep on top of what's going on." He explained that, if students missed school for some reason, it was his expectation that they would make an effort to catch up in some way. His second expectation was that students would ask questions in the room when they are having difficulties. "You meet those two criteria and the door's open to you," he explained, setting out his own part of this contract. "The door," in this instance, meant access to intensive individual assistance from him either in the classroom or, more usually, in an after-school session.

It was the student's responsibility to ensure that these expectations were met; that they made an effort to catch up on any work missed, and that they then asked questions about concepts with which they were having difficulties. Implicit in this notion of responsibility was the suggestion that, unless students accepted this responsibility and met these expectations, assistance from the teacher would be unavailable. Individual teacher assistance for students was, therefore, conditional upon their completing a certain minimum portion of the learning task independently. Max justified this expectation by

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noting that the students' learning would be facilitated by their active involvement; if they spent time working through the material themselves, they would then, "get a kind of a feel for what's going on." Consequently, rather than asking questions which were too general to be readily answered, a student would, "have specific questions to ask of me and then I can help you." At a more pragmatic level, he went on to explain, his expectation, that students would complete at least part of the learning themselves, could be justified in that he did not have available the time to assist all students in all aspects of their learning: "For me to sit down for an hour and a half and go through it again; it's counter productive." Simply repeating all the instruction that a student had missed through absence was not seen to be an efficient use of time.

Developing a sense of responsibility seemed to have benefit for the students beyond the immediate issue of catching up with work which may have been missed. Max explained that, although the students were now in junior high school,

we're gearing these kids for [senior] high school, they have to have responsibility for their success in the classroom as well. They have to have some type of responsibility. And, along with materials that they're going to be doing in high school, if they miss they've got to pick up on it. And so we're trying to kind of gear it towards that.

It appeared, then, that the development of students' individual responsibility was a principle which guided Max's teaching, because of its importance in their lives beyond the current educational setting.

From our discussions, a third guiding principle emerged, which seemed to be a guide to Max's teaching. That principle was consideration of students as "whole people". He clarified this principle by describing the importance of looking beyond the strictly academic aspect of student learning: "It goes beyond the academics. It's also looking at them as whole people. Making them feel good about themselves - - self-esteem. When you can get a kid to smile when s/he's leaving the room." Being a learner, then, was seen to be only one aspect of a student's identity. As a consequence of this understanding, Max noted that "if you know they're having a rotten day and if they walk out of your room feeling just a little bit better than they did coming in, I think you've accomplished something and the academics can come another day."

Self esteem, or students' perceptions of themselves, was central to this guiding principle and appeared to be an important aspect of Max's teaching. Reference has been made to Max's satisfaction in noting students' positive perceptions of themselves apart from their mastery of "the academics". Self esteem, though, was usually interpreted in

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terms of its relationship with academic learning. A positive perception of oneself was, indeed, seen to be a prerequisite to academic success: "I think, in order for them to truly grasp the academics, they've got to feel good about themselves first. If they don't feel good about themselves, they're not going to do anything."

Max described his personal satisfaction at those times when positive self esteem could be seen contributing to academic progress: "If you can get the class working with you, and they're feeling good and following along, it just makes my day." His own professional satisfaction and feelings of self worth were also evident as he explained that what kept him going was knowing he'd done something for the students: "and knowing that they've picked something up from you - - passing some of this information off to them and them responding well to it. And when they do well on exams or something simple like that." Having described the way that self esteem contributed to academic success, Max observed that the experience of academic success would, in turn, be likely to "boost their self esteem."

Another aspect of this whole person principle, was Max's recognition that "you have to treat them as individuals." He went on to clarify this assertion of student individuality: "You can't just say, 'OK here's a lump of students.' You have to treat them as humans, you have to maintain their dignity as well." Human dignity appeared to be a concept closely related to individuality as he noted the need for teachers to "treat them as humans. Respect their differences."

There were, however, instances where it appeared that this position was not consistently applied, particularly regarding the way he, as teacher, related to the students: "You always have to read the crowd." An understanding of the students in this collective sense, though rare in our semistructured interviews, suggested that, while at one level, Max was guided by a recognition of student individuality, at another existed an image of the class as a single identity.

About inclusive education. In addition to the guiding principles discussed in the section above, two guiding principles could be identified, which appeared to relate particularly to Max's teaching in inclusive classroom settings. These were that everyone should get the basics, and that the teacher should push them to the limits of their ability.

Max, when asked to define inclusive education, explained that, to him, it meant "that you're going to have a very diverse group of students and they're going to be all at different levels. And we're talking different levels in terms of abilities." Diversity,

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manifested by differing levels of ability to cope with the demands of the classroom, was the defining characteristic of inclusion and this was illustrated by the two principles which appeared to guide Max's teaching in this context.

One principle, asserted by Max, was that everyone should get the basics. "The basics" were understood to be the fundamental concepts addressed by the curriculum, those concepts on which rested further knowledge in the science domain. Evidence that a student had got the basics would, noted Max, be that student's ability to score more than 50%; to pass the exam. He explained the operation of this guiding principle, such that "if the kids have been following along, they should get the basics of the concepts I teach." He appeared conscious of designing his lessons to ensure that, at a bare minimum, all students would understand the fundamental principles being addressed.

A related principle was that he, as teacher, would push them to the limits of their ability. There appeared to be at least two significant aspects of this guiding principle. The first aspect was that he, the teacher, would be the one initiating and taking control of the learning. This implied a more passive role for the student than could be expected from some of his other guiding principles. Speaking from the perspective of his personal background in chemistry and physics, Max observed that "sometimes I find myself with a really strong background, really pushing the kids to the limit. And seeing how much I can draw out of them." In this observation could be seen an illustration of the active role of teacher: one who pushes and draws from the students.

The notion of drawing from the students seemed to imply a recognition of students' prior knowledge and skills: the Socratic view that solutions lie within the learner and that the role of the teacher is to draw them out. This aspect appeared to have particular significance in a class with a diverse range of ability: "You try to draw the best out of them. And not all of them are going to be rocket scientists or Einsteins or anything like that, but you try to draw the best possible efforts from them."

The second aspect of this principle, evident in Max's previous comment, was that ability could be somehow defined or discerned and that ability had limits. Although students would be encouraged to achieve as much as they could, the giving of encouragement and recognition of achievement seemed to depend on an understanding of a student's limits. "I can have a student in here that is working at a 55% average and I'll say, 'That's good for you.' Because that is your ability, that is your level." It was not clear how this understanding of a student's innate ability was determined. Max appeared to have a sense, though, of this level of ability, which was not necessarily related to

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examination grades. There were clear instructional implications of this sense of student ability; Max explained how his expectations of students differed according to [his understanding of] their ability: "I'll still push them to the limits but you can't squeeze water from stone, you know. So try to get them to work at their level."

These two principles, then, appeared to have particular relevance to Max's teaching in the inclusive classroom. It must be noted, however, that the distinction between principles which have been described as relating to teaching in general, and those described as relating particularly to inclusive situations, was by no means clear. Pushing students to the limits of their ability, for example, applied to all students in the classroom as did the principle of considering students as whole people.

Summary

Max is a teacher of science in a junior high school in western Canada. In describing how he came to be teaching in this situation, he noted his keen initial interest in chemistry and how he had a range of experiences teaching on a casual basis before accepting his current position. At the time of our discussions, Max had been teaching on a full-time basis for approximately seven years. An articulate and passionate teacher, his fascination with science and desire for students to share this fascination were evident. As he described his teaching, it became clear that he particularly valued classroom demonstrations of scientific concepts in a variety of different ways and using a range of materials.

Several principles were discussed, which appeared to guide Max's teaching. It was recognised that principles relating to teaching in general and those relating particularly to inclusion were not, for Max, mutually exclusive. Nevertheless, three guiding principles were identified from semistructured interviews, which were described as having relevance to teaching in general. These were: looking for understanding, expectations and responsibilities, and consideration of students as whole people. Within these general principles, several aspects were also identified, which provided some insights into the operation of those principles for Max. Finally, two principles were identified which appeared to have particular significance for Max's teaching in an inclusive classroom: Everyone should get the basics, and push them to the limits of their ability. Max's perceptions of the teacher's role and his understandings of student ability were noteworthy aspects of these principles.

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The Teaching Context

In the section which follows, the context of Max's teaching shall be presented. Information relating to teaching context was derived from researcher fieldnotes, written during and immediately after visits to the school.

The School and the Class

The inflight thinking of Max was examined in the context of St. Philomena Elementary/Junior High School. St. Philomena's is a school of moderate size located in an area of medium density housing close to the industrial section of a western Canadian city. The school consists of several two storey buildings although it is clear that there have been a number of additions to the structure over some unspecified number of years. Max's science classroom was reached by a circuitous journey along corridors and up flights of stairs. The room was wider than it was deep with a long bench extending across the back and down one side, above which were shelves and cupboards containing a range of scientific equipment and books. Windows stretched across the side of the room facing the door. A door beside the entrance to the classroom led into a room used for preparation and storage. The students' desks were arranged in two blocks facing the front of the room and divided by a walking space down the centre. Each block consisted of three long desks seating three students. Some students were seated at separate desks along the side of the room. The room had a pleasantly cluttered feel, with books and student papers sharing the space with bunsen burners and electrical apparatus.

Max was observed teaching a class known as 9C, and his inflight thinking was investigated in relation to the teaching of this class. This class was described by Max as having, in it, a wide range of ability: "20 percent of the students are achieving excellence, 25 percent are well below grade level." The class had 23 students, more boys than girls. The students ranged in age from 13 to 15. They appeared to be a generally good natured group, making light hearted comments with Max, who responded in a similar vein. Some of the students were very quiet, making very little contribution to the lessons. Others made frequent interjections and comments, although these did not appear to be malicious or with the intent of disrupting the lesson.

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The class contained two students who had been assessed as being eligible for the Integrated Occupational Program (IOP). These students can also be described as having a mild intellectual disability. IOP is a program which operated in Government and Catholic high schools in this province of Canada.

Formal assessment had taken place of the students registered in the IOP. In this program, there is a focus, throughout high school, on selecting and developing skills necessary for a particular occupational area. Government regulations exist stipulating that, although students involved in the IOP take more vocationally oriented subjects within their program, they must study a minimum number of certain core academic subjects. Science, the subject taught by Max, is considered one of those core academic subjects.

Max noted, however, that he considered two of these students to be borderline students, being at least two years behind grade level, more by reason of their difficulties with the English language than for reasons of intelligence. The students, although eligible for the IOP program, were not in an IOP class but were permanent members of 9C, a regular class, and were present for all lessons in this subject.

The Lessons

The first science lesson was concerned with the transfer of heat; absorbers, reflectors, and emitters. After some general explanation, Max demonstrated these concepts through use of a range of models, using solar panels which he had prepared prior to the lesson. He then outlined a project which he expected them to undertake at home. As a sample, he presented a model involving two cans of different colours. The contents of the cans were at the same temperature at the beginning of the demonstration, and, throughout the lesson, readings were taken of the temperatures as the two cans were heated. A few questions regarding this demonstration were posed by Max and he encouraged further questions and predictions from the class. Discussion of these predictions and details of the project occupied the remainder of the lesson.

The second lesson commenced with a review of some concepts about static electricity. The students had completed worksheets on this topic prior to the lesson. Max went through these sheets with the class, giving them explanations of some of the concepts and trying to draw explanations and examples from the students themselves. He provided some demonstrations of static electricity, using pith balls and an ebonite rod,

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explaining the concepts as the demonstration progressed. Students came to the teacher's desk to watch another demonstration of static electricity using a stream of water from the tap. During these demonstrations he asked questions of the students, seeking explanations from them. After some time, the focus of the lesson shifted from static to current electricity, although the students had now returned to their seats and Max was still working from the worksheets.

An attempted demonstration of current electricity using a generator was curtailed by failure of the equipment. Until the conclusion of the lesson, Max read aloud from the worksheets, discussing concepts and asking questions of the students.

Nature of Max's Inflight Thinking

Examination of inflight thinking contained in this section was derived from transcripts of stimulated recall interviews. Where reference has been made to observable actions in the classroom, this information was derived from researcher fieldnotes. The reader is reminded that, as in other case studies, where reference was made to Max's thoughts, this was actually a reference to Max's recollection of those thoughts.

Max's inflight thought could be described in terms of four main characteristics: a) Teachers and students, b) lesson structure, c) active teaching, and d) observing the process. It is maintained that these characteristics were distinctive and could be described separately. Nevertheless, they are not mutually exclusive and, as with the preceding case studies, inflight thoughts were identified which could be described within more than one characterization.

It is important to remember the assumption, described in earlier chapters, that an almost limitless number of features exist within each case study. Consequently, a process of refinement and development occurred, which involved reference to other data sources. This process was employed in order to distil meaning, draw attention to features of the data which seemed important, and make sense of the complexity in these case studies.

The process of triangulation was used at this point in the analysis, to make more likely an authentic description of the phenomenon being explored (Denzin, 1978). Thus, multiple sources of data; observer field notes, and data derived from the earlier semistructured interviews, were considered at the same time as units of inflight thought and, from this examination, characteristics of inflight thoughts were developed.

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Characteristic One - Teachers and students

Inflight thoughts, characterised as "teachers and students," were those thoughts which were concerned with the people in the classroom. These thoughts did not necessarily relate to the actions of those people but rather to their individual identity; the personal and distinguishing characteristics of the students and of Max.

Identity of the teacher. In the case of the teacher, thoughts were included within this characterization, in which the person Max, could be seen. In these thoughts, personal responses to the events in the classroom, were some glimpses of an individual who experienced a range of different emotions as the lesson unfolded.

Exploration of these personal responses indicated several instances of satisfaction and pleasure at student responses, but virtually no instances of irritation or frustration related to the students. Inflight thoughts, exhibiting satisfaction and pleasure, appeared to relate mainly to student performance. As he noted comments from a student indicating that the student understood a concept, Max thought, "It feels good." On another occasion, he laughed as he thought, "Phew, I know they're catching on!" This "phew" expression of relief occurred on several similar occasions as Max noted that students had understood the concepts being taught. From these thoughts and reference to other data sources, such as fieldnotes and interview transcripts, two possible explanations may be inferred. On one level, it appeared that Max was pleased for the students; pleased that they had learned something new. On another level, operating simultaneously, Max's feelings of relief and satisfaction seemed to suggest that he was pleased that his own explanation or teaching had achieved its purpose.

Implicit in this sense of relief was a notion of tension being experienced by Max as he was teaching. Although this tension was not evident in his inflight thinking, its presence can be inferred from the subsequent sense of relief he expressed. There appeared to be some investment of his own self-concept in his teaching and this is suggested by this cycle of implicit tension followed by explicit thoughts of relief. His personal response of pleasure was, therefore, both pleasure for the students' sake and for his own, especially under conditions where he perceived that his teaching had been successful.

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There were suggestions in Max's inflight thought that he was prepared to accept his own fallibility. In explaining the generation of electricity, he made reference to dams and asked the class if they'd seen a dam. One student quipped, "I've seen a beaver dam!" and the whole class laughed, Max included. While he quickly moved on to an explanation of the concepts, his inflight thought, "OK, I put that question out to you, unless I'm specific ... you got me!" suggested a genuine willingness to concede shortcomings in his explanation.

Feelings of regret and disappointment were also evident at times in Max's inflight thoughts. It was interesting to note, though, that these inflight thoughts related to the content of the lesson and not directly to the students or their learning. In one incident, Max realised, as he was explaining a concept relating to the generation of electricity, that he had at home a model of a dam which could have been used as a demonstration of this concept. His immediate response was one of personal irritation: "Boy, why didn't I bring that dam?" As he moved on with his explanation, his irritation had become a sense of regret: "Too bad I didn't have it, 'cause I could actually *show* the turbine and all that kind of stuff to them." Similar inflight thoughts involving regret and disappointment were evident in relation to other examples and demonstrations throughout the lessons. On two other occasions, equipment, which could have been used to demonstrate concepts, was not, for different reasons, available. Max's responses included: "I'm disappointed, 'cause it's [the static electricity generator] such a neat thing," and, "it [the electroscope] would have been nice to show them but I guess that's the way it goes," illustrate the feelings of regret associated with his inability to use these pieces of equipment.

On a few occasions, a personal response of surprise was evident in Max's inflight thoughts. Sometimes, this surprise was as a result of a student's response. In these instances, it appeared that Max was surprised because the response from the student was not the one that he had anticipated or predicted: "Oh, I didn't think anyone would ask a question like that!" and, "Ah! surprise! There are a few kids who are not sure!" This seemed to imply that Max was usually confident in his predictions of student behaviour, and variations to these predictions were sufficiently startling to produce this affective response.

Identity of the students. Inflight thoughts, relating to the students, tended to involve the students as a group or groups rather than to students as individuals. Students

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as individuals were, however, recognised and acknowledged although reference to their personal characteristics was not a feature of Max's inflight thought. As one student was describing the pattern of temperature differences charted during the lesson, Max thought, "I hope Carly will mention the plateau." As another student asked a question, he thought, "maybe Georgio doesn't really understand what it is that I'm asking him to consider." In these examples, it appeared to be Carly's observing the plateau and Georgio understanding the task requirements that were uppermost in Max's mind, rather than consideration of Georgio or Carly as individuals. In another example, Max noted the contribution of an individual student: "Nigel bringing up the answer - - to why it wasn't attracted, has just tied up that little part of the lesson." But, again, this thought suggests Max's attention to the lesson itself, rather than to Nigel, or his learning.

Max did recognize student differences in the classroom. This was usually expressed in terms of groups of students; words such as "they" and "them" being far more common than either "she" or "he." As he watched students interpreting a demonstration, he thought, "Some of them are not sure, some of them are sure." In another example, he noted, "I'll have to get those people that are having a tough time thinking about the ideas or things that they could use." It appeared that Max recognised groups of students who had certain needs or that were learning at different rates. As could be seen in the preceding example, however, there usually appeared to be a dichotomy; one group who were sure and who were not having a tough time, and another group who were not sure and who were having a tough time. Max sometimes referred to the size of these groups: "I'm sure there's quite a few of them [who picked it up]," and, "there's going to be a few that are going to come in and say, 'Gee, I really don't know what to use or how to do it.'"

Max also recognised the needs of the class as a whole. As one lesson progressed, he observed, "They're kinda getting a little bit antsy here," and consequently, finished his explanations, and moved on to another activity. Following some individual desk work he noted, "I'll give them a little bit of a break now." Observations about the students, then, could be seen to relate to them as one large group, rather than to the characteristics of individuals.

In summarising this teachers and students characteristic of Max's inflight thought, several key features can be observed. There was evidence of a personal Max, an affective dimension which went beyond the observable action. This Max experienced pleasure during the lesson, usually in the form of relief that his teaching had been successful,

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implying a preceding tension or anxiety that his teaching may not have been adequate. He also experienced regret and disappointment, but this was related almost exclusively to instances where it had not been possible to demonstrate a concept in the best way. Acknowledgement of student and groups of students was another feature of Max's inflight thinking. Acknowledgement of individual students related to their understanding of concepts or their contributions to the lessons. Reference was most usually made to the students as either one large group or two unequally sized groups: one group of students who, although sometimes needing clarification, were generally, "following along," and another, smaller group who were having a "tough time."

Characteristic Two - Lesson Structure

A second characteristic of Max's inflight thought was that of "lesson structure." Thoughts within this characterization were those in which reference was made to the overall structure of content-related teaching actions, within and beyond the observed lessons. Thoughts about the parameters, within which the lesson was and could be developed, were included in this characterization. Lesson structure thoughts could be broadly summarised as intentions, opportunities, and future teaching

Intentions. Max's inflight thoughts revealed many instances where his own intentions were made explicit. These intentions could be characterised as relating to the overall lesson structure because they appeared to serve a strategic function; reminding Max of the general direction of the current lesson and planning for lessons to come. Instances of inflight thoughts featuring Max's intentions, could be further divided into two types. Thoughts of the first type were where Max stated what he wanted to have happen. Thoughts which related particularly to his own actions, and in which he felt that he *had* to act, in a certain way or *was going* to act, were features of the second. These statements of intention appeared to serve as mental reminders to Max of the things he was about to do or things in which he was currently engaged; a form of internal guide. Examples of the first type of thought in which Max expressed a want included: "I want them to bring up an example of nature," and, "I want other people to think about the reasons why it may have gone down." In these examples, his personal desire related to something which the students would do - - generate an example, consider the reasons for an event. These were more assertive statements of personal desire than those described

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as "hoping," which will be discussed in a subsequent section. In these examples and others, such as: "I want them to follow along," there appeared to be a clearly defined course of action which he wished the students to adopt. In other examples, the clearly defined course of action related more to something that he would do: "I want to get this concept across to them," and, "I just want to rehash everything." While the source of this course of action was not made explicit, Max's inflight thoughts, referring to the things he wanted to have happen, suggested that, at a less conscious level, there was some underlying structure or sense of overall direction to which he was making reference.

In the second type of intention, Max's inflight thoughts displayed an awareness of some compulsion to act in a certain way. As in the want to type of thoughts discussed above, there was a sense of overall direction which seemed to drive Max's got to thoughts. As Max reminded the class of the homework assignment, he thought, "I've got to make sure I go through everything one more time." At another time, as he became aware of the amount of time that had been devoted to one concept, he thought: "I've gotta finish this." The compulsion or driving force in the first example, seemed to be to ensure student understanding; the driving force for the second appeared to relate more to an awareness of time.

Flowing from these statements of intention: "I want to ...," and, "I've got to ...," came inflight thoughts, in which Max noted that he was, "going to" act in certain ways. "I'm going to go through the whole assignment again," and, "I'm going to put a question into their mind." In these thoughts it appeared that there had been a reconciliation of the compulsions which he felt, and his own personal desires. Although, in these "I'm going to ..." thoughts, it appeared that a decision had been made to act in certain ways, there was no evidence of a choice being made between alternative courses of action. In the thoughts being described here, it seemed that a process existed in which there was either a statement of personal desire ("I want") or a recognition of compulsion ("I've got to") which was then followed by a statement of intention ("I'm going to"). The distinct parts of this process were not always evident for the same action, nevertheless the presence of the process can be inferred from the general structure of Max's thoughts.

Opportunities. A second feature of Max's thoughts, within the lesson structure characteristic, were those which related to opportunities, both taken and missed. An opportunity was defined as a favourable situation which arose by chance or by a "happy accident," in which circumstances came to be advantageously aligned. There were two

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aspects to Max's inflight thinking in regard to opportunities. The first was in the recognition of opportunities, and the second was the choice to either take the opportunity or to let it go. In one instance Max recognised that a student's comment had provided an opportunity to make an explanation that would otherwise have been given at the conclusion of the lesson: "That just tied in nicely! 'Thank you Mike.' It's like I paid him ten dollars to say it [laughs]." In his inflight thinking, he then displayed his understanding of the situation: "The opportunity's there [to give the explanation]." In another instance, referred to earlier, Max recognised an opportunity that had been missed. During an explanation of electricity generation, Max suddenly remembered his son's working model of a dam, which he had left at home. His inflight thinking, "Too bad I didn't have it 'cause I could actually show the turbine and all that kind of stuff to them," illustrated his awareness of this opportunity, which had arisen by chance but which he was not going to be able to use.

This, then, was an example of an opportunity which Max had to let go. On another occasion, also precipitated by a student question, he was able to capitalize on the opportunity: "OK, how am I going to seize this opportunity? And have the kids understand?" He then went on to make the explanation and develop an additional demonstration to illustrate the concept which was the subject of that part of the lesson.

This opportunity feature of Max's inflight thinking contributed to his thinking about overall lesson structure, in that it illustrated his awareness of situations which had not been deliberately constructed. While he was not always able to make use of these opportunities, it appeared that his awareness of them, as they arose, allowed him to integrate at least some of them into the structure of the lesson. Further, recognition of an opportunity implies that Max was aware of both the chance event and the general direction of the lesson, and was, therefore, able to recognize situations when those two elements coincided.

Future teaching. A final feature of Max's lesson structure thinking related to future teaching. Future, in this sense, referred to teaching beyond the current point in time. These inflight thoughts, then, were concerned with events within and beyond the current lesson.

Inflight thoughts, relating to teaching beyond the current instant but within the same lesson, have, to an extent, been discussed earlier in the context of stating intentions. When Max indicated that he was going to do something, he was making reference to an

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event that was going to happen in the future and, for the most part, the future referred to was within the current lesson. Hence his thought, "I'm going to take my time to explain thoroughly the dam and then move on to other things," was both a statement of intention and a reference to future teaching within that lesson. The sense of movement through a lesson structure was a feature of inflight thought related to future teaching within the current lesson. It could be seen in thoughts such as, "They've got a good understanding, let's move on to current electricity," and, "That kind of leads into what I'm going to be showing them with all those little examples." Here, however, the element of compulsion was absent, but Max's awareness of the next step in the lesson remained. Similarly, as he reflected on the amount of time available in the lesson, "I hope that I'll have enough time to finish that up," there appeared to be an awareness of the lesson as a whole, and a desire for sections of the lesson to be brought to an appropriate conclusion.

Future teaching, beyond the current lesson, related to particular discrete events being proposed for future lessons. Following his disappointment at not being able to show the class his model of a dam during the current lesson, he thought, "Maybe if I've got some time tomorrow, I'll just bring it in, show it to them and be done with it." In another example, he first thought about how he was going to demonstrate ways of producing current electricity: "OK, now I'm going to show them different ways." He then thought about how this teaching would be developed in subsequent lessons: "Tomorrow we'll get into the nitty gritty and really talk about the theory behind it." Max's inflight thinking here revealed his understanding of content extending across different lessons into the future. A later observation suggested that general learning activities as well as specific content, were also thought of in this long-term manner. Max reminded the students that they would have to take extra responsibility for their own learning over the course of the year. As he said this, he thought to himself, "there's going to be a lot of reading assignments from now on until the final exam." This thought appeared to indicate that, for Max, each lesson, and the activities involved in that lesson, were part of a much longer sequence of instruction.

In this section Max's 'lesson structure' thinking has been summarised in terms of intentions, opportunities, and future teaching. These factors served to describe the parameters for development of the lesson. Within these parameters, Max could attend to the content of the lesson, the students' learning, and plan for future lessons.

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Characteristic Three - Active Teaching

Active teaching was seen as a third characteristic of Max's inflight thinking. These thoughts were focussed on the active development of an understanding of lesson content, an activity extending to both teacher and student. Thoughts within the observing the process characterization, described later, also involved the teaching process. Thoughts characterised as active teaching, in contrast, were those featuring a strong sense of observable and non-observable activity. The unifying aspect of these thoughts was Max's focus on understanding. Consideration of learners, the content, and the notion of connecting were features of these thoughts.

The concept of understanding appeared to underpin much of the active teaching characteristic. While the sense of a gradual development of understanding could be seen in some thoughts, understanding, for Max, seemed to be an attribute that students either had or didn't have, something which individuals possessed or did not possess: "Good, they've got an understanding." Rather than being seen as a process, understanding was more often seen as a goal for which students should strive.

Learners. Consideration of the learners was one feature of this active teaching characteristic. Max's inflight thinking about the learners related to his desire for them to understand the content of the lesson. This was usually expressed as a wish that students might be engaged in the content of that particular lesson and in thinking in a more general and non-specific manner. His thoughts about student engagement seemed to mainly involve eliciting some physical response from the students. Sometimes this response was their attention: "I'll just throw this in to get their attention again". At other times the desired response was more significant: "OK, you guys tell me what it is ... let's get a group response here!". And in another example, a desire for student engagement was directed at an individual student: "I'll get a little chuckle out of him." Chuckles, group answers to a question, and general attention, all appeared to be related to a desire for students to engage in the activities of the lesson. At times, the relationship between engagement and understanding of lesson content was made more explicit: "I'll try to pull some answers out of them."

Related to Max's focus on student engagement were his thoughts in which he expressed a desire for students to follow along. In these thoughts, although it seemed to be Max's intention that they would be following the sequence of the lesson, the metaphor

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of leader and followers was implied: "You guys have to follow along and read on your own," and, "I want them to follow along and think while they're following along." In this final example, the reference to student thinking was made. Whereas the student engagement referred to earlier appeared mainly to relate to physical activity, a more internal or cognitive activity was the focus of some of Max's inflight thought. These thoughts sometimes related to Max's desire for students to generate personal explanations for specific scientific concepts which were the topic of that phase of the lesson: "I want other people to think about the reasons why." At other times, however, Max's inflight thoughts seemed to focus on a more general desire for students to think without specifying the direction of that thought: "I want to give them another example to get them thinking a little bit more," and, "it's time for them to think on their own."

Content. Max's inflight thoughts occasionally related to understanding of the tasks in which the students were engaged. As some students began to respond in the way he wanted, Max thought, "They all understand exactly what I'm looking for." As he prepared to explain the homework assignment a second time, he noted that this was in order that, "they know what needs to be done." More commonly, however, inflight thoughts related to understanding of the lesson content and the concepts being taught in those lessons.

Max thought about the students' development of understandings of concepts through the processes of explaining and by providing examples and demonstrations. Although Max used the terms example and demonstration interchangeably, and although they both appeared to be for the purpose of elucidating concepts, they have been treated in this discussion as distinctive. An example has been interpreted as something to which Max made verbal reference, usually an event or situation with which students could be expected to be familiar, and which illustrated the desired concept. The silver lining of a thermos bottle was an example of a poor emitter of heat. A demonstration, on the other hand, was interpreted as a visual display or illustration of a concept in the classroom. Use was made of an ebonite rod and pith balls to demonstrate the effect of static electricity. Max also made reference, in his inflight thoughts, to the act of explaining. In these references, an explanation was a purely verbal act, in which he defined, illustrated, and interpreted concepts using words alone.

Explanations sometimes related to the assigned tasks, as in the instances noted above. Max's inflight thoughts indicated his use of explanations to clarify task

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requirements for the students: "I'll just go though everything once again." Use of explanations to facilitate understanding appeared to involve a generation of explanation followed by a delivery of that explanation, both active teaching procedures. "What are different ways that I can explain these ideas to them?" he asked himself as he sought to generate an appropriate explanation. On another occasion he acknowledged, "there's just not enough time here to explain that example thoroughly." In this instance, reference to an example was being followed by a verbal explanation or interpretation.

Use of examples and demonstrations appeared to be Max's preferred method of achieving understanding. The identification of examples was evident in Max's inflight thinking: "what about a thermos bottle?", "Solar heating! That's another idea," and, "Since he brought it up, great, there's another example." In using these examples, there was a sense that the greater the number of examples, the better. Following his use of one example, he thought, "Can I throw another example in?" This attention to number of examples suggested that the quality of each example may not, for Max, have been as significant. While, in one instant, he referred to the quality of an example: "This could be an easier example." The quality, to which he was referring, appeared to be it's simplicity and, hence, " ... it won't take me as much time to explain."

Demonstrations, instances where Max provided, for the students, a visual illustration of a concept in the classroom, were the subject of some inflight thinking. Whereas some of his thoughts relating to examples, involved a search or a spontaneous generation of those examples, this did not appear to be the case with demonstrations. Thoughts relating to demonstrations were more concerned with their operation than their generation. This was probably a consequence of their usually having required some preparation and thought before the lesson began. Infrequent exceptions to this did, however, occur, as during an explanation in the first lesson, Max asked himself, "What am I going to use? I need some type of visual thing." In this instance, an additional illustration was being sought to supplement his own explanation.

More commonly, though, demonstrations appeared to be carefully prepared. One such demonstration involved the heating of two cans of different colours and the measurement of their cooling over time. This process of cooling and taking of measurements took place across the whole lesson and Max's inflight thinking throughout this lesson returned to this demonstration. As the students took readings from the thermometer, Max thought: "I'm going to let them [the cans] cool down for a few minutes and we're going to take a look at the temperatures." Here his interest in the

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demonstration was related to the activities in which the students were involved. At another point in the lesson, observing a fluctuation in the temperature, he thought, "I hope somebody will say, 'Hey, well you know, the temperature kind of stayed the same and then it just kinda went up a little bit and then it ....'"

In other instances, Max's thoughts seemed to be more focussed on the demonstration itself. When he was unable to provide a demonstration using the electroscope, he thought, "I'm disappointed 'cause it's a really neat thing" and, at another time, already discussed, his thoughts revealed a sense of excitement as he considered the model dam that he had made at home. As he set up another demonstration, he thought, "I hope this thing's going to work," indicating his focus at that point in time on the demonstration itself, as distinct from the concept which it would be illustrating.

Connecting. While Max's inflight thoughts at times suggested his own intrinsic interest in the demonstrations and examples, the more general purpose of these active teaching procedures seemed to be to facilitate connections. The notion of connecting was a significant feature of Max's inflight thinking, and was closely related to the concept of understanding, referred to earlier. Implicit in connecting was the existence of at least two components. The precise nature of these components was not identified. However, from the context in which connecting was used, it could be guessed that they might include the students' prior knowledge and the new content knowledge which was being presented to them. His thought, "I know they've connected," therefore, seemed to indicate Max's belief that students understood the new concept. There was an interesting aspect to the distinction in Max's thinking between connecting and understanding. While the outcome of connecting was understanding, connecting was used in a more active sense. A connection was something that could be made or not made and the involvement of student and teacher in the making of these connections could be seen in Max's inflight thought. For Max, the notion of connecting seemed to operate as a metaphor for understanding. As he observed students answering questions, he thought, "Maybe they'll make the connection here." Later, as the connected response of one student seemed to be in contrast to the general confusion of others, he acknowledged, "But I don't think the other kids are making that connection." His own involvement in making a connection for the students could be seen at times in thoughts such as, "I want to make the connection for them," when he felt that there was insufficient time available for students to make connections themselves.

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A metaphor, involving the physical connection of components, was also being suggested when Max's thoughts revealed notions of tying and leading. Leading implied a lesser involvement of the student in the learning process but a sense of connection between the content being currently learned and that to be learned in the future. An example of this was his thought, "This will kind of lead them into what we're going to be doing tomorrow." Here, the student was being led by the content and activities of the lesson, which, in turn, was being directed by the teacher. Tying, on the other hand, appeared to imply a connection between content which had been taught earlier and that being currently learned. Again, the students appeared to have a less active role here, as Max thought, "I want to tie this investigation into what I asked them to do for their assignment."

A final aspect of the active notion of connecting was the sense that these connections had to be made within a limited time. Awareness of time as a finite resource was an aspect of Max's inflight thought, which is discussed subsequently in terms of observing, but within the active teaching characterization its significance was Max's reaction to this awareness. Rarely did Max's thinking reveal a passive acceptance of time. Instead, he reacted by either increasing or decreasing the pace of his teaching: "OK, I'm getting really pressed here for time, I've got to finish this up," "we've got to quickly get through this to move on," and, "I'm going to take my time to explain thoroughly the dam." Being pressed for time appeared to have implications for both student understanding and for a coverage of the content. While both of these seemed important for Max, getting through the planned content of the lesson usually took precedence: "I just don't want to run out of time and not finish up current electricity," and, "we've got to quickly get through this."

In summarising this active teaching characteristic, the operation of three features could be seen: Consideration of the learners, the content, and the connecting concept. Max's inflight thoughts revealed an attention to students as learners or participants in the learning process. These thoughts mainly related to students' physical engagement in the lesson activities, although reference was made to his desire for students to think about the concepts being taught. Attention to the content of the lesson included considerable detail regarding examples, and demonstrations, key components of Max's teaching. The notion of connecting was identified as the means by which students' prior knowledge, new and future content, were brought together to create new understandings.

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Characteristic Four - Observing The Process

The final characteristic, which emerged from Max's inflight thinking, related to his observing of the process of learning and teaching. The term observing is used because, in contrast with the preceding characteristic, these thoughts did not have the same sense of activity and, instead, suggested a distance between Max as observer of the lesson and the lesson itself. Thoughts were included in this categorisation if they involved an awareness of different aspects of the lesson or participants in that lesson, but no explicit reference to active teaching. The nature of Max's inflight observations of the lesson appeared to depend on whether the event or situation, about which he was thinking, were in the future, present, or past.

Future events. An intriguing feature of Max's inflight thinking were those thoughts relating to events or situations which were yet to occur. These were further described as predicting and hoping. Max's predictions of student responses, which were about to occur, appeared to be based on knowledge of the students and of the way they typically acted. As he observed a classroom discussion, he thought: "a lot of kids are going to come up with some great ideas but there's going to be a few that are going to come in and say, 'Gee I don't know what to use.'" Max's predictions generally seemed to be relatively confident. "I already have a good idea that she's going to answer it properly," he thought as a student raised her hand to volunteer an answer. Later in the same lesson, as he was about to introduce a demonstration, he made a confident prediction of the student's reactions to that demonstration: "I know what's going to happen." Sometimes this confidence seemed to stem from a perception that he had been, in some way, responsible for those responses. This occurred in one lesson as he observed, "I definitely set it up for a question like 'what do you mean?'" Predictions involving students' internal thought process, however, contained an element of uncertainty: "I don't know whether or not they're going to be able to understand exactly what I'm asking them." Only once did his predictions relate to his own actions as he prepared to explain a complex aspect of the lesson: "I'm going to fumble over my words here, for sure."

Inflight thoughts, about events and situations yet to occur, were sometimes expressed as hopes. In these thoughts, Max appeared to be expressing both an expectation and a desire that a situation would come about. His hopes were mainly

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related to student responses and to outcomes of demonstrations. As a student prepared to answer a question, he thought, " I hope she's going to answer it properly." As another student began to explain a concept, Max reflected, "I hope Carly will mention the plateau." His hopes were not limited, however, to actions of individual students, but also included hopes that the larger class group would respond in certain ways: "I hope they remember that it was in there". At other times, particular individuals or groups of students were not specified and, instead, his hopes related more to the response than to the respondent: "hopefully somebody's watching what I'm doing," and, "I'm hoping for a response like 'What's he doing? What's he up to?'"

Max also expressed hopes about the outcomes of demonstrations. This was not surprising given the degree of importance placed on these demonstrations for the illustration of concepts. "I hope this thing's going to work," he thought as he prepared to demonstrate the static electricity generator. Observing the demonstration involving the gradual cooling of two cans, he thought, "Hopefully this can right here, this dark can will in fact let a little bit more heat out."

His hopes were not expressed with the same confidence as predictions, but rather more tentatively. This suggests that in Max's inflight thinking there is an anticipation, a degree of tension, which contrasts with the confident predictions he makes about events yet to occur.

Current or past events. Max's inflight thoughts also revealed an observation of events which were currently occurring or had just occurred. These thoughts were described as monitoring, interpreting, and evaluating, and all involved an awareness of situations in the classroom without necessarily intervening in those situations. Max monitored the students (both individually and in groups), the demonstrations, and his own thoughts and actions. Monitoring was more explicit at some times than others. Thoughts, in which the actions of students were explicitly monitoring without any simultaneous interpretation, were, for instance, not common. Nevertheless, these thoughts did occur: "I've got everybody's attention", Max thought as he monitored the degree to which the students were paying attention to him. At another point in the lesson, his thought: "There's a couple still fuffling ... Doing a little bit of this and a little bit of that" also indicated his monitoring of student attention. As one student raised a new issue in the class, he noted, "She brought something else up."

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Thoughts involving self questioning, a relatively common feature of Max's inflight thinking, were interpreted as a form of monitoring. When Max asked himself questions such as, "Do they really understand the design," and, "How am I going to get through it?" he seemed to be implying a monitoring of the current situation or at least a prompt to engage in some monitoring. In one example of self-questioning, he had been copying some data from the demonstration onto the chalkboard in a routine manner. His thought, "Why am *I* doing this?" implied monitoring and a sudden realization that he was doing something that could be more usefully done by the students. This thought was followed immediately by a thought indicating his intention to get students involved in this activity. There appeared to be two significant aspects of Max's self-questioning. First, they related almost exclusively to examples or demonstrations. Student understanding was considered in such statements as, "How am I going to seize this opportunity and have the kids understand?" However, the focus was clearly on an understanding of the examples and demonstrations themselves rather than an explicit focus on the underlying concepts. Second, these self-questioning thoughts were open ended. Instead of posing questions for himself in the form of a choice between alternatives "Should I do this or this?" his inflight thoughts were of the "What should I do?" form. "What can I do," "What are different ways that I can explain these ideas to them," and, "What can I do to rectify the situation here?", he thought, as he searched for alternatives. His use of these open-ended questions suggested a degree of spontaneity in Max's inflight thinking and his focus on the examples and demonstrations further suggested that this spontaneity was directed toward visual and practical illustrations of scientific concepts.

Interpretation of monitored events and situations was a common form of inflight thought. The particular observable events, on which these interpretations were based, was not, however, always evident. Interpretations of student understanding apparently derived from a monitoring of their actions Thoughts involving understanding and connecting have already been discussed, but it was clear that either before or at the same time as active teaching thoughts, there were thoughts involving the monitoring or awareness of student understanding. Monitoring, then, was a either a pre- or corequisite of interpretation and then of active teaching thoughts. "I'm already convinced they know what's going on," he thought, illustrating his interpretations of the understanding of the class.

Max's apparent desire to simultaneously observe and interpret student action could be seen to be operating as he watched the actions of one student: "Billy's kind of

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sitting and listening but I don't know where his mind is." In this example, the monitoring of Billy's actions is apparent . However, the limitations of Max's ability to interpret these actions is acknowledged. Examples of interpretation where the monitored event could only be implied were common. "Phew, I know they're catching on," suggested that although not a part of Max's inflight thinking, he had monitored some action by the students that had somehow indicated their understanding. Similarly as he thought: "I think the kids are starting to understand it as well," he was basing this interpretation on some observable response.

That the student actions, on which interpretations were based, were not an explicit part of Max's inflight thoughts suggested a degree of automaticity in this monitoring. Max appeared to be, at some less conscious level, monitoring some student responses, which he then interpreted in certain ways. It was on the basis of these interpretations that his own actions and thoughts were determined. There was no indication that Max made distinctions between his own interpretations of student actions and any alternative interpretations. Hence, when he commented to himself: "They're kinda getting a little bit antsy here", he was interpreting some students' behaviours as being indications of unease or boredom. Similarly, in the second lesson, when he thought, "they haven't caught on," he was interpreting some actions of students as being indications of confusion or lack of understanding.

Evaluative thoughts were noted which could be described as an aspect of observing the process. These thoughts appeared to imply the existence of a monitoring and an interpretation, but went beyond these to include a sense of judgement. As Max noted some bewilderment in the class, he thought, "Hmm, maybe I didn't spend enough time explaining to them exactly what those two questions meant". In this example, his monitoring and interpretation of student reaction seemed to lead to an evaluation of his own explanation. His self questioning also implied a degree of self evaluation: "Am I clear with the two questions?" More commonly, however, the responses of the students were the subject of evaluation: "I didn't think anybody would ask a question like that," he thought in a judgement about the quality of the student's question. His thought in response to another student's question revealed a positive evaluation: "It was a great question, he was kind of on the topic."

In summary, this final characteristic of Max's inflight thought, observing the process, appeared to be concerned with a more detached consideration of the lesson and participants in the learning process. Described in terms of thoughts about future, present,

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and past events, it was clear that an awareness or monitoring of observable actions in the classroom, while usually unstated, was the basis for subsequent thought. Max made extensive use of predictions and interpretations of events to make sense of the complexity in the classroom.

Summary of Characteristics

In the preceding section, Max's inflight thinking has been explored and described. Four main characteristics emerged from this exploration: a) Teachers and students, b) lesson structure, c) active teaching, and d) observing the process. These characteristics have been individually described and analyzed, their salient features noted.

Throughout this section, the focus of the exploration has been on the inflight thoughts themselves. In the section that follows, possible relationships are examined, which exist between these inflight thoughts and the guiding principles identified earlier in this chapter.

Relationships between Guiding Principles and Inflight Thinking

In the following section, relationships shall be explored which existed between those principles which guided Max's teaching and his thoughts while he engaged in that teaching.

As with the other case studies, guiding principles, which had been described by Max, were sometimes referred to in an explicit manner in his inflight thinking but more commonly implied. Prior to an analysis of his inflight thinking, the way in which these guiding principles related to one another was not clear. During examination of Max's inflight thinking, however, interconnections and relationships began to emerge allowing a more coherent understanding of both principles and inflight thoughts. Examination of these relationships facilitated a better understanding of Max and the nature of his thinking than could examination of either guiding principles or inflight thoughts alone. These relationships emerged as themes and are discussed in the following section.

Throughout the analysis of Max's guiding principles and his inflight thinking, there existed a sense of movement and urgency. Max used words and phrases which were continual reminders of movement: "Let's move along," "don't waste time," "follow along," and, "I've got to hurry." While relationships between Max's guiding principles

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and his inflight thinking could not,completely, be attributed to this sense of movement, it was at least a factor in most of the themes. The relationships which emerged from analysis of guiding principles and inflight thinking shall be explored in terms of three themes: a sense of direction, the travellers, and teaching instrument.

Sense of Direction

Sense of direction was a theme running through both Max's guiding principles and his inflight thinking. The clearest illustration of this theme in the relationship between guiding principles and inflight thinking, was Max's knowledge of the destination of this teaching and learning process. In an explanation of his guiding principles, Max made particular reference to the importance of gaining understanding. Understanding appeared to be a destination or a goal towards which his teaching was directed. This was also seen in Max's inflight thinking, characterised as active teaching, in which there appeared a clear focus on understanding as a prize which could be possessed and towards which students could work. Understanding meant a deep and personal construction of meaning by students about particular scientific concepts, those concepts which were the subject of the lesson and the science curriculum. Looking for understanding, then, was an explicit aspect of Max's inflight thought, and the one which formed the basis of thinking described as active teaching.

Although, in Max's inflight thinking, understanding appeared to be the one destination towards which he was heading, reference had been, made in his explanation of guiding principles, towards another which went "beyond the academics," and which involved making the students feel good about themselves. This destination was only hinted at in Max's inflight thinking and did not appear to have the significance during the lesson attributed to it in the earlier discussion of guiding principles.

Identifying a destination seemed to be one aspect of this sense of direction. Another was knowledge of the direction which was being taken at any particular point in time. Knowledge of the direction, in this context, meant an understanding of the way that the students and the lesson were developing. This was referred to briefly as "reading the crowd" in Max's guiding principles but was a more significant feature of his inflight thought. The inflight thoughts contained many instances of Max observing the process; monitoring the actions of the students and the operation of various demonstrations. Max's observation of the process, however, was heavily overlaid with his personal sense

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of direction. Hopes and statements of intention, relating to events yet to come, indicated that Max was aware of the current direction of the lesson and also of the destination towards which he wanted to head. His interpretations and evaluation of the current situation also suggested his knowledge of the actual direction being taken.

A convergence of these two aspects, knowing the destination and knowing the direction currently being taken, were particularly evident in Max's evaluative thoughts. It appeared that Max was constantly striving to ensure that the direction being taken was the most efficient means of arriving at the destination. His inflight thoughts related to the seizing of opportunities were good examples of this. These opportunities, unplanned short cuts, were usually taken up eagerly. If the opportunities were missed, there was a sense of personal disappointment. This same desire to take the most direct route could be seen in his choice of demonstrations and searches for examples which might make the achievement of understanding more efficient. Inflight thoughts relating to student engagement could be interpreted in the same way. Unless the students were engaged in the lesson, 'following along' in the direction being taken, there was an evident risk that the destination may not be reached.

The Travellers

"The travellers" was another theme running through both Max's guiding principles and his inflight thinking. Travellers included all those participating in the lesson, without making any assumptions about the degree to which those individuals contributed to their own progress.

Max, himself, was one of those travellers, and the role he played most often appeared to be that of leader. With reference to the previous theme, however, Max, at times, appeared to be a leader who was, himself, driven by some internal sense of urgency and desire to reach the destination. His statements of intention, described within the lesson structure characteristic, were frequently laced with thoughts such as "want to" and "got to," and implied a tension which was released when students understood concepts throughout the lesson. References to his role as leader emerged during discussion of guiding principles. Max had identified the importance of giving them the basics, knowing the material and pushing them to the limits of their ability, and while this latter example could be interpreted as leading from behind, all were clearly examples of teacher directed learning. This role as leader was also evident in Max's inflight thinking.

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Much of his active teaching thoughts related to teacher as leader of the travellers in the classroom. This leading included the provision of examples, demonstrations and explanations. While the significance of these demonstrations as teaching instruments shall be discussed in a subsequent section, the selection of these demonstrations was that of the teacher/leader. His role as leader was further illustrated in thoughts relating to connecting, in which the connections between prior and new knowledge were made [for the students, presumably] by him.

At times, however, Max assumed the role of a travelling companion. This role was most evident in those thoughts characterised as observing the process, in which there appeared to be some detachment between himself and the other travellers. In these thoughts and active teaching thoughts, was a sense of personal interest in the content matter, an excitement about the subject of the lesson which could be shared with his fellow travellers.

While Max was usually a leader and sometimes a co-traveller, there was never a suggestion that he was a follower of the other travellers. His earlier references to the importance of knowing the material provide some insight into this phenomenon. It appeared that Max placed particular value on his own understanding of scientific concepts and their application, and was reluctant to admit that this understanding might be less than complete. If understanding of scientific concepts was the destination towards which the class was travelling, if Max placed such significance on arrival at this destination and personally identified with this destination, it is not surprising that he should see his role as that of a leader on this journey. Allowing himself occasionally to be seen as a co-traveller would similarly be consistent with his perceptions of himself. Being led towards the destination, however, would not be consistent with his belief that he had already arrived and was not, therefore, seen in either his guiding principles or his inflight thinking.

The students were usually those following the lead of the teacher. Sometimes, in both guiding principles and inflight thoughts, Max's understanding of this role was made explicit. His personal satisfaction, when this was happening was evident when, in relation to the students as whole people principle, he observed that if the class was working with him, "feeling good and following along, it just makes my day." In Max's inflight thoughts relating to active teaching were several references to the importance of students "following along." These thoughts appeared to contrast with Max's understandings, explained within the looking for understanding principle, of students as

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active learners and of learning being an active process. Following, implied a degree of passivity which was also illustrated in inflight thoughts within the active teaching characteristic. Here Max thought about "pulling answers out of them," getting particular responses, and engaging their attention as if without his intervention these things would not occur.

Some of Max's thoughts did suggest an awareness of students as leaders in this journey towards understanding. It must be noted, however, that when this happened, Max was not the traveller being led. Instead, students were understood to be leading themselves or each other. Max made a brief reference to this in elaboration of guiding principles. While discussing the importance of explaining concepts in a variety of ways, he mentioned the power of student-generated explanations. It seemed, however, that the student as leader aspect of this issue was not as important as the opportunity to generate a variety of explanations. In Max's inflight thoughts were more frequent references to students taking a lead in their own journey. Described within the active teaching characteristic were thoughts in which Max acknowledged students good questions, their explanations to each other, and their innovative interpretations of demonstrations. There was a sense, though, that where students were taking this leadership role it, was not a premeditated situation designed by Max. Instead, students were becoming actively involved in learning for some unspecified reason and Max was acknowledging this after the event.

In addition to the discussion of the roles of the travellers, was Max's perceptions of the individuality of those travellers. There was a clear contrast between guiding principles and inflight thinking in this regard. While in outlining his guiding principle of students as whole people, Max had noted the importance of treating students as individuals and respecting their differences, this was less evident in his inflight thoughts. In these thoughts, students were most commonly considered in terms of a single class unit, less commonly in terms of members of either a group who were following along or a group that were having a "tough time", and even less commonly in terms of individual identity. In addition, that individuality was only considered in relation to differing degrees of understanding of the concepts being addressed in the lesson. In guiding principles, however, Max had commented that students needed to feel good about themselves before they could effectively engage in academic learning. When, during a lesson, Max thought, "I'll try to get a little chuckle out of him," this was more for the purpose of engaging the student's attention than to make that student feel good about

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himself. This contrast between guiding principle and inflight thought suggested that whereas at one level Max could articulate a commitment to students' self-esteem, this was subsumed in practice by the importance of understanding the content of the lesson. A possible explanation of this was, as Max had intimated in discussing student self-esteem, that the experience of academic success would be likely to boost self-esteem and hence a focus on academic success could be seen as a means by which self-esteem could be enhanced. There was, however, limited evidence for this explanation in Max's inflight thinking.

The Teaching Instrument

The "teaching instrument" theme emerged in both guiding principles and his inflight thinking. The term instrument was chosen to describe the sense in which this theme related to the agency or means, by which teaching was carried out. An important aspect of this theme was the focus on teaching as distinct from learning. While, at times, Max was himself the instrument for teaching, at other times it appeared that the demonstrations and examples were serving this function. This theme, while similar in some respects to aspects of the role of the travellers, described earlier, related more to the motivating forces behind the lesson, the participants, and the activities in that lesson. The sense of travelling towards a particular destination was not a feature of this theme.

The primary teaching instrument appeared to be Max. In his guiding principles he had explained his desire to make the content real for the learners, to explain concepts in a variety of ways, and to provide effective demonstrations and examples. In his inflight thinking were many examples of thoughts relating to getting the students to think, explaining concepts, seizing opportunities, and providing effective demonstrations and examples.

At times, however, there appeared to be some secondary teaching instruments; the demonstrations, examples, and lesson content. Max's emphasis on the value of examples and demonstrations was evident in his guiding principles. He explained this by saying that many students learned by seeing and doing and that demonstrations fulfilled this function. In exploration of Max's inflight thoughts, however, the significance of this explanation became more clear. Max appeared to choose and implement demonstrations which, then, became the teaching instrument or the means by which teaching would take place. His personal interest in the concepts and in the way that they could be

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demonstrated seemed to cause him to transfer the duty of teaching from himself to those demonstrations. It was as if, by observing the demonstration with sufficient care, attention, and thought, the students would be able to deduce the underlying scientific concepts. This interpretation of the demonstration and content as teaching instruments provided a possible explanation for the degree of attention to those demonstrations and examples which was evident in Max's inflight thoughts. If the achievement of understanding was a guiding principle for Max, then the selection and successful operation of that teaching instrument would be seen as very important. Where the teaching instrument was, to some extent, not under the direct control of the teacher, it could also be expected that the teacher would experience some degree of personal anxiety and tension. That this was evident in Max's inflight thought tends to support this interpretation.

Chapter Summary

The content of this chapter has been a case study of the participant known as Max, a junior high school science teacher. In the early sections of the case study, Max's voice was heard as he described how he came to be teaching in that inclusive classroom setting, how he went about teaching, and what it meant for him. The principles, which guided his teaching in his grade nine science class, were articulated and explored. Three principles relating to teaching in general were identified: Looking for understanding, expectations and responsibilities, and students as whole people. In terms of inclusive education, two additional principles were identified: Everyone should get the basics, and push them to the limits of their ability.

Following this section, a description was presented of the context in which this examination took place, Max's science class in a Catholic junior/elementary high school in western Canada.

An exploration of the nature of Max's inflight thinking followed and revealed four main characteristics: Teachers and students, lesson structure, active teaching, and observing the process. In his thoughts, a particular focus on the content of the lesson was noted as was a his continuous interpretation of current events and predictions about future events.

In the final section, relationships between Max's guiding principles and inflight thinking were explored. A sense of movement and urgency was noted throughout much

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of Max's inflight thinking, and the relationships between these and his guiding principles were discussed in terms of themes labelled: sense of direction, the travellers, and the teaching instrument. It was observed that Max's focus on the scientific concepts and the ways they could be demonstrated appeared to be central to his teaching, and that student understanding of these concepts was a goal towards which he continually strived.

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CHAPTER EIGHT

Case Study Five - Christine

This chapter, the fifth and last in the series of case studies, follows the same format as the preceding chapters and is divided into four main sections: a) An examination of the participating teacher, b) information about the context in which she is teaching, c) description and analysis of the teacher's inflight thinking, and d) an exploration of relationships between the teacher's guiding principles and inflight thinking.

The participant featured in this case study is known as Christine. Christine, like Denise, was a teacher of English. With Max, the participant in the preceding chapter, she taught in the junior high school section of St. Philomena's Catholic Elementary/junior high school. A quiet and self assured woman, in the early part of her teaching career, she acknowledged that despite her initial training as a teacher of elementary students, she now preferred teaching junior high school.

The Teacher

In the section that follows, Christine introduces herself and provides some insights into her life and teaching. The words used in this section are those of Christine, compiled from interview transcripts or researcher field notes.

Focussed Life History

> A personal profile. My name is Christine. I'm a teacher of Language Arts in a Catholic Elementary/Junior High school in a city in western Canada. I trained at the University in this city as an elementary teacher. I think in elementary there is a little more ability to move around. I'm a Special Ed major too. My degree is very flexible, it really says that I'm qualified to teach K - 12 in the special ed setting. I decided to do a Special Ed. major because I had heard that job prospects would be better if you had a special ed background, and at the time, there were more special ed positions available in elementary.

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I "fluked" into junior high, basically. I've been teaching now for six years and, at the beginning, I was working as a sub[11], replacing teachers on leave. I was teaching at an elementary school near here for five weeks to start with. Then another teacher in this school went on leave and I replaced her for about ten weeks in the Learning Centre next door.

Then, after Christmas, they gave me a chance teaching in the junior high section of this school. This is now my third year in this school, but I've taught a number of different subjects since I've been here, I've just picked them up. I like Social Studies and I really like Language Arts. I've taught Phys. Ed., I like that, but I'm very comfortable with Social and Language Arts and I've found that I have a very good rapport with the junior high kids. But while I've taught different subjects, I've been lucky enough to be in the same school. They've kept me on by getting me to teach in different positions.

I think I've learned, having so many different kinds of positions. I was very scared at first at how to get the material across. But I've learned that true teachers just learn the curriculum and teach it to whomever they need to teach it to, however they feel.

You've asked me about highs and lows in my teaching career. I'd have to say this year would be both - - a high and a low, but I'd say that they're more personal than professional. A real low for me was earlier this year. We found out in January that Jim, a boy who had been in my home room class, had committed suicide. He'd left this school before Christmas but it was a real shock, he was such a popular kid. The school counsellor came into the home room class one morning and told us, and it was awful, we all reacted with shock, we were all crying, we couldn't believe it. I think that experience brought me and the class closer. We each saw that the other was human, had feelings. He was such a popular, good looking guy, and the last person you would think to do that. That would be a low, going through that experience. And I think I felt the same as the students. There was a whole door open that was new to me.

There have been some real highs, too. Like just last week; I'd been doing a unit where they brought in some music lyrics that were poetic and we talked about what that would mean. I've got these two cool boys in this class: one has a

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11 Sub. A substitute teacher, employed on a casual, usually daily, basis.

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mirror with him all the time and his hair is slicked back, and the other boy is kind of the other end. Academically, if we're speaking inclusively, he's someone that I'd have to really think about. Well, last week, the two of them both had their hands up to answer a question and they were arguing about who would answer first. I thought, "Wow, this is so cool. This is poetry and you guys are fighting over who's going to answer the question first!" These are the coolest guys in grade nine. And so I had a bit of a rush. I thought, "Wow, this is good, this is working!"

I've had some good moments before but, because this was poetry and they were so into it, I felt that I had a little success in my unit. I had never taught poetry. But their involvement and their enthusiasm, and who was responding, told me that I was doing a good job. Because it was those kids, not the kids who always have their hand up. And I actually stopped the whole class and just said, "Wow!" I was kind of trying to savour the moment but it kind of boosted their ego too. They felt good that I was acknowledging them and they weren't embarrassed by having their hand up in poetry and answering questions. They were really into it. So that would be one of my highs.

I don't tell many people those stories, though. I don't say, "guess what happened in class today?" I keep that inside and I think about it, and tell a friend who's not a teacher or something. If I walked into the staffroom and said that, that would be boasting a little bit and I don't think that's necessary. Someone may have had the worst day imaginable and s/he doesn't want to hear me come in. That was just my moment for me.

Even though I was trained for elementary I now prefer teaching junior high. I can remember the first few days where we had home room orientation, when I thought I'd 'arrived'. I had a feeling that I was in the right place at the right time. But I can't remember any single event that changed my teaching. I really think, with teaching, you get better the more kids you teach, the more different subjects you teach. A really experienced teacher is someone who can see the different pieces of the puzzle and who finds the puzzle easier to put together. I can have my week planned in an hour because I've had experience. When I first started I could have taken a week and I still wouldn't have had anything done. I could see only a tiny little piece of the puzzle.

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Teaching information. I've been asked to describe what I do as I teach 9C. Well, the general outline of my lessons is different all the time. If we have projects on the go, if we're correcting, if I'm returning assignments, I don't always have a lesson to speak of. I don't always have a teaching objective. Sometimes, it's just kind of paper work and follow up. For instance, they have a poetry assignment for the weekend. So, when I see them next, I'll give them a few minutes to gather and chat first. I like to recap what we've done and what we're going to do. So then I'll recap: "We finished off this and we're on our way to finishing poetry and you have an assignment coming, so let's talk about the assignment," and ask questions. Then, today, they're going to have time to work, and have a chance to see me one-on-one and ask questions, and get some planning done and some writing. So today I'm giving them time to do the assignment. In my classes, we do a lot of discussion and follow up on assignments and stuff. I encourage a lot of discussion and that's where the inclusive ed kids stand out mostly, in discussion.

And I've been kind of mean actually. There are a few kids who never participate and there's one person in particular, Sandra, that is one of the inclusive ed kids and I force her to participate, I put her on the spot. For instance, the other day we were looking at a poem and there was a question, "Which part of the poem do you like the most and why?" It's the same kids always who have confidence and put up their hands and she just sits there and I know she's capable of answering so I said, "What do you think?" And would you believe she sat for five minutes and I waited five minutes. The kids got frustrated and said, "Oh, answer, say something!" but I stayed calm and I repeated every minute or so and I put her on the spot because to me, if she's in this class, she can answer that question and I'm going to push a little bit. I'm going to force her to participate. I don't like to humiliate her or make her cry or anything. When she does answer we all clap and make a big deal of it and then the next day she puts her hand up. Well, that's what happens with Sandra, putting her on the spot, forcing her to answer. Maybe she thinks that she can't or she's afraid. But the next day, I asked her a question and she put her hand up and I said, "I'm going to have a heart attack!" And all the kids started laughing. She laughed and she answered the question. So for some reason it works with her.

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I wouldn't use that technique with a lot of the other kids because they would be angry with me for putting them on the spot. They would be humiliated. I can just sense whether this is the kid to do it with by her personality. Usually a lot of kids will not wait five minutes to answer, that's how long it took with Sandra. And I said to her we're going to stay here until you answer the question. And all the kids, they're groaning and they're getting mad at her, and I thought, "Well, that's good maybe." The question I'd asked her was an opinion sort of thing. That's why I knew she had an answer. And I said, "Everybody has an answer here."

Then there's one boy who sits at the front, Bruce, and he'll verbalize if he doesn't understand something. He'll yell out, "I need Mrs. W.[the support teacher]," "What does that word mean?'" "I don't get this, this is too hard." He'll verbalize all of this, whereas Sandra will never say a thing. Never. She's the girl who doesn't say anything. So they're both inclusive ed kids in my opinion and they both respond totally differently to what happens in the class.

I think a person who's not a teacher wouldn't even have a clue what I meant by special needs. If I said special needs, you wouldn't know what kind of needs I would be talking about. The perception is probably that the kid's just having a hard time. Those two kids I've described are good examples because they're two extremes. But there's three or four kids who are kind of between them. There are other kids who are inclusive ed kids who will put up their hand on occasion voluntarily, but Sandra is one girl who rarely does and never asks for help.

So, as far as inclusive ed goes, giving answers in class is where it becomes visible to me more. Of course it's visible when I see her work and I'm marking and stuff, but I expect something from everyone and sitting there not answering is unacceptable to me.

I've probably never taught a class that didn't have special needs kids in it. I think every class has someone who doesn't fit the norm; who falls below, far below, everyone else. But teaching 9C is different to teaching another class. For one thing, I know that there are some people in that class who are not as capable as the others.

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Guiding Principles

Christine is a thoughtful and articulate teacher in the early part of her teaching career. The position she holds now is not the one for which she was originally trained. It is, however, one with which she feels comfortable. Once the parameters of our interview had been established, Christine talked freely about her view of teaching and about the principles which guided her in her teaching.

From an analysis of Christine's responses in the two semi-structured interviews, four guiding principles emerged. Two of these related to teaching in general: "Wanting students to like being here" and "learning what I'm teaching." An additional two principles related specifically to teaching in an inclusive setting: "Everybody can do it (to a certain extent)," and, "accommodation and advocacy."

About teaching in general. The first guiding principle, wanting students to like being here, Christine articulated almost apologetically, noting that it may have been, "a little more casual than what you want to hear." Nevertheless, it was a principle which she described as being "number one" and the principle most immediately described. Christine explained that she wanted students to like coming to her class because their willingness to come to class appeared to be the basis for future success. Future success, in turn, seemed to be predicted by the amount of effort students put into assignments. A student who liked coming to her classes, therefore, could be expected to put more effort into assignment work and could be expected to do better at Language Arts than a student who did not like coming.

When expanding on this principle, Christine's focussed almost exclusively on the aspect of task difficulty. If work was perceived as too hard, then students would not like coming to her class. The converse of this, that students may not like coming to her class if the work was too easy was not explicitly stated. The implication, however, was that to make the class a place where students would like to be, the teacher needed to ensure that work was at an appropriate level for the students. Christine did not, in this context, elaborate on issues of student individuality and differing interpretations of too hard.

There appeared to be two aspects to this issue of task difficulty: experience and perception. Christine observed that sometimes students actually experienced work which was too hard for them. In this situation, students became frustrated and turned off from the activities of the classroom. The second aspect related more to perception of difficulty.

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If a task were perceived by students as being too hard then they might try to avoid engaging in that task. In both situations, the result would be that students would not like being in the classroom.

Perception of task difficulty was an issue on which Christine elaborated in more detail. She described how students developed a sense of fear if they perceived that the task was going to be too difficult for them. This sense of fear would then prevent them from engaging in that task. Implicit in this understanding was the notion that it was not the task itself of which the students were afraid, but rather the consequences of engaging in that task. These consequences were not made clear by Christine, but it could reasonably be assumed that they would be related to issues of self-esteem and peer perception. If the consequences of failure had been negative experiences for the students, the students might wish to avoid them in the future.

Christine acknowledged, however, that engagement in learning tasks would not always be predictable and safe: "I want them to take risks in their writing and their thinking and not to be afraid." This reference to risk seemed to imply that students would need to venture into areas of uncertainty in order to learn. It appeared that a degree of self-confidence would be necessary if students were to do this. She commented that if students believed that they could do it, then they wouldn't be likely to be turned off from learning and knowledge: "Well, they won't get to that point very often!"

References to fear and to being afraid emerged frequently in Christine's discussion of this guiding principle. She made it clear that an environment in which students felt fearful was not an environment in which students would like to be, and that reducing or eliminating these feelings of fear was, therefore, something that guided her teaching. Christine explained that this principle meant that, as teacher, her role was, "kind of luring them into believing that this is OK. Poetry is interesting, it's OK, you're going to like it!"

In concluding this analysis of the wanting them to like being here principle it should be noted that there was no reference made to other aspects of the lesson about which students might be fearful and which could also be eliminated. Further, there was no reference, in this guiding principle, to other aspects of the lesson or the classroom environment which could be increased or modified to make students like being there.

The second principle which Christine identified as guiding her teaching was a desire for students to learn what she was teaching. What she was teaching, her choice of lesson focus, appeared to be significant for Christine. There was no indication that this

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principle related to incidental learning or learning that might not be directly concerned with the specified topic. She did acknowledge students' prior learning, but identified the concepts being taught by her as those on which the students should focus: "Everybody in that class can write an essay but some are way better than others." She went on to explain that students should learn what she was teaching first, "and then their own skills will kick in."

This principle was closely related to the meaning Christine placed on the concept of learning. For Christine, learning seemed to be an understanding of the lesson content being taught. To achieve this understanding, she explained, required students to become engaged in the activities of the lesson and, for this reason, she was "always thinking of how to lure them in, how to get them involved."

Christine acknowledged, however, that, at times, she found the implementation of this principle to be very frustrating and that some students didn't understand concepts taught many times in class. She described how at one stage, when the students weren't catching on to the concept of essay format, despite her use of many different teaching approaches, she had put up her hands in class and said, "I don't know how else I can teach you guys this!"

Related to this concept of engagement, was the way that Christine viewed the responsibility of students in the learning process. She made it clear that, while engagement in discussions was desirable and that she would go to some lengths to facilitate this engagement, it was absolutely necessary for students to ask for help in an appropriate way. Unstated requests for help, such as avoiding the task or not contributing to discussion, were not appropriate. Christine asserted that it was the responsibility of students to take the initiative in asking for help. She developed this concept by explaining that, for some students, she had even written a note on returned assignments, advising them to come and ask for help. If the students did not then come for help, however, her responsibility in the process of giving assistance was discharged and she could do no more. Christine commented that in the situation being described, a possible reason for a student not asking for help might be that the student didn't care. She acknowledged that she had no way of confirming this interpretation and that even if it were the case, she couldn't make the student care. In this situation, though, the best she could do would be to let the student "know that I'm there."

Within this guiding principle of "learning what I'm teaching", the teacher's responsibility for providing additional assistance to individual students appeared to be a

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significant aspect. Christine implied that for her, asking for help functioned as the simplest aspect of the process and hence a first step. It appeared to signal a certain minimum degree of engagement which was a precondition for teacher assistance.

About inclusive education. Christine identified two guiding principles which appeared to have particular relevance to her teaching in an inclusive classroom setting. The first of these was defined as "everybody can do it (to a certain extent)". "It," Christine, explained, was to participate in the activities of the lesson. Examples included making contributions in class discussions, offering opinions, and asking questions. The main feature of this guiding principle, then, was her assertion that every student in her class could participate in these activities. Parenthetically she acknowledged that participation and performance of lesson activities were a matter of degree. There appeared to be two possible explanations for Christine's confidence in student participation: that the lesson activities would accommodate all students and/or that the students had demonstrated their ability to perform all lesson activities. Christine did not make clear which of these explanations formed the basis of her confidence, and a combination of both appeared most likely.

Christine illustrated the operation of this principle by describing a situation which had occurred recently. She described her personal confidence that a student who did not offer an opinion, was not doing so because she had no opinion but for some other reason. In this situation, the student could perform the task but had, for reasons unknown, chosen not to. Christine's subsequent teaching, then, was based on this premise. As was illustrated in the example presented earlier in the "Teaching Information" section, her interpretation of the student's response appeared to be validated.

While an acceptable level of student participation was not defined by Christine, she did appear to have some internal standard or level: "To sit there and not put your hand up, that's unacceptable to me." This comment had been made in relation to a student with special needs, and it seemed that the acceptable level of participation varied according to Christine's perception of student ability. At a very minimum, however, she explained that, "I expect something from everyone." Christine's assertion of the need for students to take the initiative in asking for help, described earlier, could be interpreted as another minimum level of student participation. To ask for help was a lesson activity which Christine believed could be performed by all members of the class, including those with

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special needs. Similarly, being able to give an opinion was seen as an activity which all students could perform: "The question I'd asked her was an opinion sort of thing. That's why I knew she had an answer."

The second principle articulated by Christine, which appeared to guide her teaching in an inclusive situation, was that of accommodation and advocacy. In this principle could be seen Christine's attempt to grapple with two apparently competing issues. The first involved a recognition of student difference and a need to somehow adapt the lesson to accommodate those needs. The second involved a wish to advocate for students with special needs, by minimising their differences in the eyes of their classmates.

Christine, in defining her understanding of inclusive education, had explained that it was "trying to accommodate everybody's learning abilities ... without taking these kids out." In this statement she acknowledged that, within an inclusive classroom, there existed a range of ability and that the teacher would need to accommodate this range. The ability of individual students and their 'capacity' to perform tasks was a factor that, without being explicitly stated, Christine seemed to know. She then provided some examples of ways that this accommodation would be achieved. One of these involved varying expectations of performance, usually revising expectations downwards, "not expecting as much". She noted, however, that having different expectations for some students was difficult because, "I have to mark her in relationship to everyone in the class." Another accommodation was in the way she might work with the students, providing more individual instructions to students with greater need. Yet another was to change the requirements of the task, to match the task to the ability of the student. To illustrate this accommodation, Christine described how she might require everybody to learn the basic format of an essay and, then, "how far you go with that is relative to their skills."

The other issue involved in this guiding principle, was advocating for the students by attempting to minimise perceptions of difference. Christine explained that as a teacher in an inclusive class, she needed to treat all students in the same way. Reacting to the notion of grouping students by ability, Christine observed that "they would know immediately how I grouped them ... I would feel very uncomfortable doing that for that purpose." She went on to explain that while students with learning difficulties knew that they were not like everybody else, to put them in a group that would inevitably be labelled the "dummies" group would be "reinforcing his belief that he's a dummy." Going

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beyond the students' perception of themselves, she noted that, "the regular kids have a very low perception of the IOP kids[12]. They think they're all dummies." A part of her role and responsibility as teacher in a regular class, then, was to advocate for students with special needs: "I have to see them in one sense as all regular kids because I don't want anyone to believe that I believe s/he's a dummy." She described how one aspect of her advocacy was to say to those students, "You're not a dummy, don't talk that way. No one is a dummy."

The principle of accommodation and advocacy, then, was one which guided her teaching in an inclusive classroom, and one which addressed two contrasting aspects of instruction. It could be seen that Christine acknowledged the way one aspect would at times confound the other. Her simultaneous discussion of the two, however, indicated a recognition and awareness of the way these aspects could be brought together and expressed as one guiding principle.

Summary

Christine is a teacher of Language Arts who, although in the early part of her teaching career, has experienced a range of teaching situations. Trained for elementary teaching, she described how she fluked her way into teaching in the junior high school but how she now felt very comfortable teaching these students. High and low points of her teaching career were those relating to students, and had both happened within twelve months of our interviews. It was clear that, in both situations, Christine had been conscious of experiencing some personal growth; an awareness of being closer to the students and in a sense of professional satisfaction.

In semi-structured interviews, Christine identified four guiding principles. Two of these, wanting students to like being here and learning what I'm teaching, related to teaching in general. Another two, everyone can do it (to a certain extent) and accommodation and advocacy, related particularly to inclusive education.

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12 Integrated Occupational Program (IOP). Vocationally oriented program for students with mild intellectual delay.

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The Teaching Context

The School and the Class

Christine's inflight thinking was investigated in the context of St. Philomena Elementary/Junior High School. This was the same school described earlier at which Max, the participant described in chapter seven, also taught.

Christine's classroom was located towards the rear of the school, and opened off a broad corridor. The room was roughly square, with windows across the side facing the door. Opposite the door, in the front corner of the room, was the teacher's desk, on which were piles of books and papers. An overhead projector stood on a table in front of the teacher's desk. The individual student's desks were arranged in rows facing the chalkboard at the front of the room. Shelves with books, papers, and globes, extended down the side of the room beside the door, and a pinboard stretched across the back wall. There were few posters or charts, and the room, in the absence of the students, had an empty feel.

Christine was observed teaching 9C class, the same class that Max taught. The class was made up of 23 students, more boys than girls, ranging in age from 13 to 15 years. They appeared to be a generally relaxed and good natured group. Some students made very little contribution to the lessons while others engaged in friendly banter with each other and with Christine.

The class contained two students who had been assessed as being eligible for the Integrated Occupational Program (IOP). These students could also be described as having a mild intellectual disability. The IOP program operates in both provincial and Catholic high schools in this province of Canada.

Formal assessment had taken place of these students registered in the IOP. In this Program, there is a focus throughout high school on selecting and developing skills necessary for a particular occupational area. Government regulations exist stipulating that although students involved int he IOP take more vocationally-oriented subjects within their program, they must study a minimum number of core academic subjects. Language Arts, the subject taught by Christine, is one of those core subjects.

One of the students registered with the IOP program had access to a support teacher, Mrs W., who was present in the classroom for one of the two videotaped lessons. During that lesson she circulated around the room but continually checked on

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the progress of one student, providing individual assistance usually by clarifying Christine's instructions.

Christine, like Max, noted that some students in 9C, who were registered in the IOP, were also students who were experiencing some difficulties with the English language. Students registered in the IOP in 9C, a regular class, were permanent members of this class and were present for all lessons in this subject.

The Lessons

The first videotaped lesson was the second half of a double period. The subject of the lesson was a one act play, a murder mystery, which the students were supposed to have read prior to the lesson. Mainly a discussion lesson, Christine asked questions, encouraged students to make inferences, and sought their opinions. The early part of the lesson involved Christine trying to draw, from the students, a solution to the mystery. After some time, Christine told the students how she thought the murder had been committed, and her subsequent questions related to the motive and to some more general issues of human relationships. About half the class were involved in the discussion; it appeared that many of the remaining students hadn't read the play. At times, the discussion was interrupted by unrelated wisecracks from a few students. Most of the students not involved in the discussion sat quietly throughout the lesson. In the final ten minutes of the lesson, Christine described the next assignment and issued sheets to those who hadn't received one in a previous lesson.

Drama was also the subject of the second lesson. The lesson began with Christine reviewing a quiz which had been set in a previous lesson. She then displayed an overhead transparency of dramatic terms; dialogue, irony, monologue. Students copied notes from the OHT into their books as Christine dictated and explained some of the concepts. During this time students quietly copied and there was some good natured banter between the students and Christine about some of the terms.

After this, Christine read the introduction and plot summary of the one-act play which they were about to read. She then asked for volunteers to read the different parts in the play. There was a mixture of responses to this; some keen to read, some keen to avoid reading. After allocating parts, the remainder of the lesson was occupied with an oral reading of the play. As the play was being read, some students finished copying notes from the OHT. Students not involved in reading the play sat quietly, following the

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script from their text books. The lesson concluded with Christine confirming the date of their next class with her, and thanking the students for being quieter than in previous lessons.

Nature of Christine's Inflight Thinking

Examination of inflight thinking, contained in the section, was derived from transcripts of stimulated recall interviews. Where reference has been made to observable actions in the classroom, this information was derived from researcher fieldnotes. The reader is reminded that, as in other case studies, where reference was made to Christine's thoughts, this was actually a reference to Christine's recollection of those thoughts.

During semi-structured interviews, Christine had appeared initially reticent and sometimes hesitant, as though she were carefully considering her responses. Her recall of inflight thoughts, however, showed no such reticence or hesitation. Instead, she reported her inflight thoughts easily, in great detail, and with minimal prompts. In this stimulated recall, four main characteristics of her inflight thoughts emerged. These shall be discussed in the subsequent section as a) elements of teaching, b) individual thinking, c) participant observation, and d) thinking ahead. It is maintained that these characteristics were distinctive and could be described separately. Nevertheless, they are not mutually exclusive and, as with the preceding case studies, inflight thoughts were identified which could be described within more than one characterization.

It is important to remember the assumption, described in earlier chapters, that an almost limitless number of features exist within each case study. Consequently, a process of refinement and development occurred which involved reference to other data sources. This process was employed in order to distil meaning, draw attention to features of the data which seemed important, and make sense of the complexity in these case studies.

The process of triangulation was used at this point in the analysis to make more likely an authentic description of the phenomenon being explored (Denzin, 1978). Thus, multiple sources of data; observer field notes, and data derived from the earlier semi-structured interviews, were considered at the same time as units of inflight thought and from this examination, characteristics of inflight thoughts were developed

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Characteristic One - Elements of Teaching

The first characteristic of Christine's inflight thoughts referred to thoughts associated with non-specific or elemental aspects of teaching, the foundations or building blocks of Christine's teaching. These thoughts are described as elements of teaching because the other characteristics of her inflight thinking appeared to be developments of these fundamental aspects. These elements were: overall plans, lesson content, pace, and her choices to attend to these different elements. Christine made reference to students, but within this characteristic they tended to be to the students as one, relatively homogeneous, group.

Overall planning. Overall planning was one feature of Christine's inflight thoughts within this elements of teaching characteristic. These thoughts revealed a conscious consideration of prior learning, the current lesson, and extended to thinking about learning that may happen at some future time. This future time was sometimes within the next couple of minutes or at least within the current lesson. Future time also referred to time beyond the current lesson. A plan, in the sense used here, was an outline or a procedure which would or could be implemented. Existence of thoughts about deliberate plans within and between lessons, suggested that Christine was cognisant of some unstated overall structure for this lesson and future lessons. While many of these overall planning thoughts appeared to be spontaneous, their presence could be taken as evidence for an underlying structure.

Christine's inflight thoughts, about overall planning, appeared to acknowledge and connect with prior learning as a basis for planning the current lesson. In one example, Christine became aware that the students had forgotten material addressed in an earlier lesson. Reflecting on past events, she recognised that an explanation for this forgetting might have been the amount of time that had elapsed for some of them: "They probably can't remember because some of them had gone swimming Thursday. It might have been *last* Thursday that they read the play." In another example, consideration of an earlier lesson was the subject of Christine's inflight thought as she discussed literary devices: "They should know the term 'irony' because we just did some poetry and so they're familiar with that term." The students did not, however, recognize the term, and she then considered ways it could be clarified: "The play that we just read, was there any irony in it?" Here she was again thinking about their prior learning experiences and

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about ways that these prior experiences could be connected with the current lesson plan. Consideration of previous lessons was also evident as she thought at the beginning of a lesson: "Yesterday, we did a whole class of discussion; today I want a variety." Rather than the content of the previous lesson, this thought revealed consideration of the way that the previous lesson had been conducted, and contained an implicit comparison with the way she wanted the forthcoming lesson to be conducted.

Inflight thoughts, where Christine was engaged in planning the current lesson, were common but, in keeping with the 'elements of teaching' characterization, were concerned with the more general framework of the lesson. While consideration of prior learning was deemed to be one aspect of overall planning, thoughts related to current and future learning were qualitatively different. These thoughts reflected Christine's awareness that the teacher could not influence prior learning but could significantly affect current and future learning. Inflight thoughts, in which she considered plans for the current lesson, often appeared to be statements of intention. This could be interpreted as reflecting the immediacy of the event or action about which she was thinking. These plans, sometimes apparently spontaneous, were ones which were to be implemented straight away, or at least within the current lesson and, hence, the absence of detailed consideration was not surprising. "I want them to think along a different line now," she thought, as she began to change the direction of a discussion. Noting available time and the nature of the current activity, she thought, "I don't want it to take too long, I'm only going to do one overhead sheet." And, as she quickly scanned the room looking for a student to continue reading the one-act play, she thought, "He read the last one, I'll get someone else."

Associated with these plans for the current lesson were thoughts which reflected Christine's awareness of methods for their implementation. As she prepared to draw the students' attention to the actions of one of the characters in the one-act play, she thought, "let's look at her again, and let's see if that gives them any clues." In another example she thought, "I'm spelling it out to them," as she made clear an aspect of the lesson. Similarly, she thought about actions which she could take to prevent undesirable events occurring: "I'm going to try to avoid him making a big scene," she thought, as one student entered the room in a flamboyant manner.

Inflight thoughts sometimes related to plans for learning and teaching beyond the current lesson. These thoughts did not have the same sense of immediacy and decisiveness that could be seen in thoughts about plans for the current lesson. Thoughts

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about future lessons appeared to be less definite and sometimes seemed to function as personal memos, or reminders of actions that would have to be taken in the future. Awareness of ways that these actions would be implemented, was not, however, evident in these inflight thoughts. In one example of these thoughts, Christine noted that she would have to address the issue of reading fluency, although she was not sure how this would be done: "A little light bulb's gone off! I've got to work on reading fluency somehow." Her use of the light bulb image in inflight thought is interesting and suggests a sudden and vivid thought which occurred to her as she was teaching. In another example, her plans for the next lesson could be seen as she considered who would be involved in reading the play: "Next day I'll have someone else take his spot." Again, this thought did not contain reference to details of the future action, but appeared to serve as a reminder of action to be taken.

Lesson content. Christine thought about the content of the lesson in two ways, both of which were related to more general elements of teaching. In the first, her inflight thoughts related to her personal interest in the content, in contrast to thoughts about the content as a topic for the lesson. In the second way, her inflight thoughts were concerned with ways that lesson content and concepts could be taught. As the class read a one act play concerned with a mysterious murder, Christine's personal interest in the content could be seen, as she thought, "It's getting obvious to me what happened in the story," and, "this is another clue as to who the murderer was."

More common, though were thoughts in which Christine considered the content as something to be taught. Lesson content involved stimulus material, such as the assigned worksheet or the one-act play itself, and the concepts which this material was being used to illustrate. Christine's inflight thoughts addressed the content in both ways. "They're not really understanding what's happening in the story," she thought, relating the content of the one-act play to the process of teaching. In this example, it was the stimulus material itself which was the subject of her thought. At other times, Christine's inflight thoughts were directed towards the more abstract concepts being taught: "They have to get the idea that they're almost presenting a dialogue," and, "Let's make a generalisation about people's behaviour." It was interesting to note that thoughts related to the stimulus material and ways it could be presented, appeared to have a greater significance for Christine than thoughts about the concepts which were illustrated by those materials. It could have been that these fundamental concepts to do with literature

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and analysis of texts were not available for recollection because they were being thought of at a more automatic, subconscious level. Another interpretation was that Christine's attention was dedicated to students' satisfactory performance of the assigned tasks, such as contributing to the discussion and answering questions, leaving no opportunity for attention to underlying concepts. A final, and more probable interpretation in this context, is that, for Christine, the stimulus material for that lesson and the more abstract concepts were one and the same thing. Reading this one-act play was not a means for illustrating the function of drama, for example, but was a means for illustrating this one-act play. This interpretation is suggested by the tendency in Christine's lessons for a significant amount of time to be devoted to a small number of activities, and by the scarcity of thoughts in which specific reference to abstract and fundamental concepts could be found.

Pace. Pace was another element of teaching reflected in Christine's inflight thinking. Only one reference was made to time as a finite resource and, in that thought, it appeared to be more the passing of time that was Christine's concern rather than allocation of time: "The time is running out and they're watching the clock." There were, on the other hand, several references to pace in Christine's inflight thought. Pace was the speed or rate of progress of the lesson and was evident in thoughts referring to quickly, and getting things going. Although explicit reference to time was only made once, there was a clear implication that a lack of available time was the reason that increased pace would be required: "I want to deal with that quickly and get back to them ... I want to get to read the play today." There were several other similar references to pace: "I need to keep moving", "let's get through the homework quickly," and, "I've got to get things going here." All of Christine's inflight thoughts in which pace was featured referred only to an increase in pace. There were no thoughts in which Christine considered that the current pace of the lesson was satisfactory or that the pace needed to be slowed down. It was possible, however, that ,at a less conscious level, Christine was aware of pace and that only when there was a need to increase the pace did these thoughts emerge at a more conscious level.

Choices. The final element of Christine's inflight thoughts within this characteristic related to the choices she made to attend to the elements mentioned earlier. Her inflight thoughts revealed choices to act, choices not to act, and consideration of alternatives.

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Choices to act tended to be expressed as intentions and were, thus, similar to the thoughts described earlier as relating to current plans: "He's on the right track but I'm going to ask him something to make him explain himself more clearly." "He's thinking he's going to slip by again not doing any work and I'm not going to allow that to happen" she thought, as she noted a student trying to avoid a lesson activity. In these inflight thoughts, Christine was indicating that a choice had been made and that the choice was for her to act in a certain way. Although, in a few instances of open-ended self-questioning it appeared that alternative courses of action were being sought, there was, in general, little evidence of a process in which alternatives were considered prior to a choice being made. The choices that were being made all related to actions which Christine was going to take immediately, these choices did not relate to events occurring more than a few minutes into the future.

Some of Christine's choices were not to act but to allow the current situation to continue. As she listened to a student make an interjection, she thought, "[he's] waiting for someone to say something but I'm just going to let him keep going." In response to another student interjection, her choice was also to take no action: "I'll ignore it." Her choosing to take no action in these two examples related to inappropriate student behaviour and an apparent desire to minimise the effect of this behaviour by not reacting to it. Other inflight thoughts, however, revealed choices not to act which were apparently stimulated by desire to facilitate student learning. Students, in one lesson, were bickering amongst themselves about an interpretation of a section from the one-act play. As Christine listened, she thought, "I'll let them hash it out a bit." This thought was similar to another thought, "I'll let him explain himself to see if he knows what he's talking about." In both of these thoughts her choice not to act seemed related to appropriate student actions and a desire to promote this behaviour by allowing it to proceed. Her use of words implying permission, "I'll let ...," suggested that allowing the current situation to continue was a deliberate choice and not simply an observation of that situation.

It has been recognised that Christine's inflight thoughts contained very little evidence of alternatives being considered prior to, or during, the process of choice-making. Self-questions did occur in which it appeared that Christine was seeking an alternative course of action: "Is there anything from the play that we can use as an example?" and, "how can I work on fluency here?" There were, however, no clear alternatives identified as a result of this questioning. There was, however, evidence that

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Christine considered alternatives *after* she had chosen to act or not act in a certain way: "I should have done this in the very beginning." In this thought, Christine was explicitly considering two alternatives: the first being the action which she had just taken, the second being an action which she could have taken but chose not to. This conscious consideration of alternatives after the choice had been made appears to be more related to an evaluation of her own teaching than to choice, and is discussed in more detail subsequently as an aspect of Christine's participant observation inflight thinking.

Characteristic Two - Individual Thinking

This characteristic of Christine's inflight thinking referred to thoughts, in which there appeared to be specific reference to or consideration of students as individuals. Whereas, in the elements of teaching characterization, it was noted that Christine sometimes made reference to the students as one group, it was more common for her to refer to individual students and to be aware of individual characteristics. While, in this individual thinking characteristic, reference was sometimes made to groups of students, she seemed to be acknowledging that those students appeared to have individual characteristics.

The clearest evidence of her thinking about individual students occurred when Christine's thoughts reflected a knowledge of the individual. Other features of this characteristic were engaging the student and student thinking. These features contained reference to characteristics of the learners and to the facilitation of their learning.

Knowledge of the individual. Christine's knowledge or awareness of the characteristics of individual students was a significant aspect of her inflight thinking. Students were thought of by name and reference to individual students appeared to be evenly distributed between students who were academically capable and those who were not.

Christine's inflight thoughts usually appeared to be stimulated by students' performance of particular class activities such as reading, attending, or responding: "That's very typical of Grigor to think of something like that!" she thought, as he gave his interpretation of a section from the text. In this thought an awareness of Grigor's characteristics was evident in her categorising his response as typical of him as an individual. Awareness of student characteristics was also evident in thoughts such as,

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"she's not always right but she tries," and "Tom's got a bit of a lisp, I hope he's not embarrassed."

In other thoughts, Christine demonstrated an awareness of individual students without explicitly connecting this awareness with a knowledge of student characteristics: "Carl is really missing the boat and he's just confused." Although a detailed knowledge of Carl was not apparent in this thought it was significant that in Christine's inflight thoughts she tended to refer to individual students by name: "Good for Grigor!", "Randy still has his hand up", "Nicco again, here he goes!" Even when students were not referred to by name it was clear that Christine was attending to individuals rather than to a group of students. In response to a student's frustrated comment that he didn't understand the passage being studied, Christine thought, in a form of unspoken dialogue, "Good! I don't want you to get it straight away." Listening to another student she thought, "She knows what she's talking about."

Although these inflight thoughts related to students who were actively involved in the lesson in some way she also thought about individuals who were not contributing at all: "Neil in the back has his head down but he's just been hospitalised and he looks really pale so I'll just let it go," and,"Sandra isn't saying anything."

Engaging the student. A second feature of Christine's individual thinking characteristic were her thoughts about student engagement. Christine thought about ways that involvement of students, individually and in groups, could be increased. In some thoughts, she made reference to deliberate teaching actions which would give students no choice but to participate: "I'll purposely pick on him to bring it to his attention," and, "I'm trying to put her on the spot." This putting a student on the spot, while it related to student engagement in learning activities, seemed to have an almost punitive purpose.

Thoughts about student engagement with a more clear focus on learning were also less directive. In these thoughts, Christine referred to drawing them out and luring them into involvement in the learning activity: "I'll just see if I can draw out what he's talking about," and, "I'll be able to lure them into this one." Drawing responses out from students seemed to imply that Christine had confidence in the student's possession of as yet unstated knowledge. This Socratic view of teaching was also evident as she thought, "He's on the right track but I'm going to ask him something to make him explain himself more clearly."

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Examination of inflight thoughts relating to student engagement, also revealed some fascinating thoughts relating to getting a reaction from the students. As she explained the reasons for an activity, Christine mentioned that they would soon be assessed on these skills in an examination: "If I say 'final exam' they'll perk up and they'll think it's serious, which it is." Less closely related to the content of the lesson was an incident in which, as students were taking it in turns to read aloud from a one-act play, Christine walked to her desk and picked up a mechanical pencil sharpener. As she did so she acknowledged to herself that she was doing this, "just to bug them so they'll all look at me and make a face." Although initially these thoughts appeared to be out of character, some observations from fieldnotes, including her spontaneous use of jokes in the classroom, tended to confirm that getting a reaction from the students was one way in which Christine sought to engage the students in the lesson.

Other, less striking, thoughts related to encouragement and discouragement. Christine's thought, "come on, you guys!" as she waited for a response to a question, suggested that she was almost willing them to provide the required answer. In contrast, as she tried to ignore a student volunteering to read, she thought, "I don't want him to read 'cause it will just take too long."

Student thinking. The final feature of Christine's 'individual thinking' characteristic related particularly to the thought processes of the students. Related to the feature of student engagement, Christine, in these thoughts, expressed a deliberate effort to stimulate the thinking of individual students. "I've got to get him thinking through what he's saying here so it makes sense," she thought as she questioned one student on his response. Ensuring that the students did some thinking appeared to be more significant for Christine than the quality of that thinking. This was evident in her frustration with students who appeared to be unused to thinking: "They're not used to doing a lot of thinking." Similarly, she was critical of her own action which had inadvertently interrupted a student's thinking: "I shouldn't have gone to get that book then because now his thought has gone." Nevertheless, Christine's thought, "I'm admiring her thinking. She's thinking a little bit beyond what most of them are thinking," did appear to demonstrate her recognition of quality thinking in this instance.

Facilitating understanding was closely related to the facilitation of student thinking. Christine seemed to be interested in developing a deeper comprehension of lesson content than would be available through surface learning or rote recall. "They're

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not *really* understanding what's happened in the story", she observed as one student misinterpreted an incident in the play. Her desire for students to "really" understand, in this thought, appeared similar to her desire for a deep comprehension, indicated by her thought, "I want to get the information down to them." Deep comprehension was also suggested by thoughts in which she tried to "make the comparison," "make the connection," and, "relate something to real life."

Characteristic Three - Participant Observation

Thoughts characterised as participant observation, were those in which Christine displayed an awareness of events or situations in the class without thinking of associated teaching actions. This was analogous to the situation of a participant observer, who is at the same time, a member and an observer of a group who avoids interfering with that context by her or his presence. Monitoring, the predominant feature of this kind of thinking, was a prerequisite to the other forms of thinking. It must be noted that while no reference was made within this characterization to immediate physical action, Christine displayed considerable cognitive activity.

Monitoring. Much of Christine's cognitive activity related to the monitoring of events in the classroom. A prerequisite to many other thoughts, monitoring was, in itself, a neutral thought implying neither approval nor disapproval of observed events. In these general monitoring thoughts, specific aspects of which could then be described within other characterisations, Christine noted that something had happened or was happening. Almost all examples of Christine's monitoring contained an implied, as distinct from an explicit, awareness. Her thought, "Randy still has his hand up, " clearly implies that she is monitoring the actions of this student. This thought, in common with her other monitoring thoughts, does not contain explicit metacognitive awareness of the "I'm aware that . . ." form.

In addition to monitoring student action, Christine's inflight thoughts demonstrated a monitoring of student emotions and student understanding. As it came the turn of a student with a slight articulation difficult to read, she demonstrated her sensitivity to his feelings by thinking, "I hope he's not embarrassed." Later, she became annoyed at a student who called out an answer at an inappropriate time. Her annoyance appeared directed at the student's lack of sensitivity: "That's just disrespectful to other

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people, he doesn't have that awareness." As she observed a student's frustration with his peers she thought, "he really knows what he's talking about and he's getting frustrated with everybody else not getting it now." This type of monitoring went beyond observable actions and academic thoughts to the student's affective state.

Also going beyond observable actions and relating more to internal states were inflight thoughts in which Christine monitored the students' learning. In these thoughts, observable actions appeared to be indicators of student understanding: "They're still not getting it. They can't agree even about who killed the bird." "They don't know what dialogue is", she thought, in another example of monitoring student understanding. This type of thought involved Christine in interpretation of observable student actions, a feature of her thought which is discussed in more detail in a subsequent section.

Christine also monitored her own actions and thoughts. Actions monitored were those related to the progress of the lesson, but more specifically to her own role in that lesson and her teaching activities. "I can see that I'm losing everybody here," she thought, as she acted to draw one student's attention back to the lesson. Although this thought related to the current state of the lesson as a whole, Christine was attending here to her own actions, and the relationship between those actions and the lesson. Rather than thinking that the lesson itself was losing focus, Christine's perception appeared to be that students were losing their focus on her as teacher. In a similar thought, Christine monitored her own actions in relation to the progress of the lesson: "I've talked enough, now let's get them talking and reading." There was also evidence of inflight thinking in which Christine's own thinking was the subject of her monitoring. In an interesting illustration of this, Christine, while listening to a student reading, recognised a need to develop reading fluency: "A little light bulb's gone off - - I've got to work on reading fluency somehow." In this example, Christine's inflight thinking reveals her awareness of her own thought as a visual image serving to remind her of teaching to be done. Another thought, "I didn't realize that he read that way," also implies monitoring of her own thinking as she becomes aware of a new understanding. Paradoxically, awareness of her own thinking was also displayed as she realised that she couldn't provide an example of a dramatic term for the students, "I can't think of anything!"

Affective thoughts. Another feature of Christine's thoughts which could be characterised as participant observation, were thoughts displaying evidence of personal affect; thoughts about Christine's own feelings and emotions as the lesson progressed.

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While similar in nature to some of the monitoring thoughts described above, these thoughts were sufficiently distinctive to warrant individual discussion. These thoughts could be described as being positive, negative, or neutral. Positive affective states in which Christine displayed feelings of pleasure or enjoyment, could be seen in several examples of her inflight thinking. As a student gave an answer which she had been anticipating, she thought, "it feels good, absolutely." This explicit reference to feeling good is in contrast to other, more evaluative, thoughts in which good referred to the quality of a response. Christine's responses to some offbeat student comments reflected a sense of fond indulgence: "that's so cute!" and "isn't that cute?" Thoughts displaying feelings of surprise could be interpreted as neutral affect. A student gave an unexpected answer to a question and Christine thought, "We never ... ! It had nothing to do with suicide!" In another thought, also in response to a well intentioned but wildly inappropriate response, Christine's thought, "Oh God ... cartoon?" displayed her surprise. There were several instances of negative affective thoughts. These were usually in relation to the actions of students in the class, "I'm getting a bit frustrated," "I'm really annoyed," "I'm not too impressed," but, on one occasion, were elicited by the noise of students in the hallway outside. Christine's own actions appeared to be a source of frustration. "Shoot! I'm not paying attention and I'm going to lose them!" she thought, as she became aware that her own attention to the lesson had wandered.

Interpreting. Flowing from Christine's monitoring of student actions came her own interpretations of those actions. A first step in this interpretation appeared to be an awareness of student action, response, and thought. The next step was some active thought by Christine, in which those observable responses were taken to represent an otherwise unobservable response. This process was a significant feature of Christine's inflight thinking and seemed to signify her conscious efforts to make sense of the complexity in the classroom. While Christine seemed to use immediate observable clues to develop this interpretation, other information, such as knowledge of the individual student, class, or of other similar situations also appeared to be used. In an example of this, Christine observed that some students were not volunteering answers to the questions being asked about the play. She interpreted this observation as signifying that "a lot of them haven't read the play." Similarly, an observation of other student action, "they're not listening to each other" was interpreted as an indication that "things are just fizzling out." From student actions, Christine sometimes derived interpretations of

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student thought or motivation: "Randy still has his hand up, he still wants to read." In this thought ,Randy's observable action was interpreted as representing his unobservable aspiration. Interpretations of student thinking, or the absence of thinking, could also be seen as Christine thought, "he thinks he's getting away with it" and "she probably has no clue what we're talking about." Other assumptions about student learning were also based on interpretations of their action. As she listened to the response of one student, she thought, "she knows what she's talking about " Here a student's appropriate answer was interpreted as signifying a deep understanding of the concepts being discussed.

Sometimes, Christine sought an interpretation but had difficulty in this process. A student had given an answer to a question, which appeared to contain insufficient evidence of the student's learning. Christine thought, "I'll just see if I can draw out what he's talking about." In another example, she considered alternative interpretations of a student response without being able to identify one as the most likely: "Either they don't know what 'dialogue' is or there's something not right here."

Evaluating. Following from Christine's monitoring and from her interpretation of that awareness, evaluative thoughts were often revealed. Thoughts described as evaluative consisted of an implicit comparison between an action or situation, either observed or inferred, and some internal standard which Christine applied to that action or situation. The details of those standards were not made clear, but their existence was implied by thoughts which suggested that actions or situations were good, bad, or indifferent. Whereas inflight thinking, described above as monitoring and interpreting was seen as relatively neutral, a feature of Christine's inflight thinking was these thoughts in which an assessment was made and standards applied. Christine evaluated student actions and learning, and her own teaching.

The student actions which Christine evaluated were usually observable. After monitoring the activities of the students quietly following the reading of the play, she revealed an evaluation of that activity in her thought, "Good. They're doing what they're supposed to be doing." In this instance, the existence of an implied standard was clear. Because "What they were supposed to be doing" was the standard, their compliance with that could be evaluated as something which was good. Similarly, as a student answered a question, Christine thought, "Good! Somebody can answer the question," indicating positive evaluation of that student's action. In an evaluation of a student's innovative comment, she thought, "That's kind of neat." In contrast, a vague student answer was

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followed by the thought, "that [response] is so general it could apply to anything." Here Christine had made a negative evaluation of the student's answer based on an implied standard that related to specificity.

Evaluations of student learning, though less observable and usually based on interpretations, were also revealed in Christine's inflight thinking. "Some of you still don't get it!" she thought, in an evaluation of the extent to which students understood the meaning of the play. Interpreting Grigor's response as an indication of his learning, she then evaluated that interpretation and thought, "Good, he's on the right track."

Christine's evaluations of her own teaching were a significant aspect of her inflight thinking. Interestingly, all these evaluative thoughts tended to be negative; judgements that her teaching actions had been less than satisfactory. After she had changed the direction of one lesson and told the students a solution to the murder mystery play, she thought, "I should have done this in the very beginning." One interpretation of this negative evaluation was that, by contrast, her current teaching actions were judged as being more positive. Thus, a possible function of this evaluations of a previous teaching action may have been to justify teaching actions in which she was currently engaged. Later, having apparently interrupted a student's thought by walking across the room to get a book, she evaluated this action as she thought, "I should have just stood there and listened to what he had to say." In this instance, a negative evaluation was unrelated to her current teaching actions.

Characteristic Four - Thinking Ahead

Thoughts characterised as "thinking ahead" were those thoughts in which Christine considered events or situations which had not yet occurred. These inflight thoughts consisted of forecasts which could be described in terms of anticipating and hoping. Anticipatory and hoping thoughts, however, differed in terms of the likelihood that the forecasts would become a reality and the basis on which the forecast was made. Anticipatory thoughts tended to be made more confidently than hoping thoughts but, also, seemed to be based on her professional knowledge and experience as a teacher. In anticipatory thoughts Christine revealed an expectation that different events would occur. Hoping thoughts, on the other hand, tended to be less confidently made and, while still relating to teaching and learning, were expressions of her personal wishes and aspirations.

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Anticipating. Christine anticipated events or situations when she expected them to occur. Anticipation could be distinguished from wanting or hoping, in that things could be anticipated which were not desirable. Christine's anticipation was related to students and particularly to their actions and responses. Implicit in all anticipatory thoughts was a knowledge of the students as individuals. It was clear that knowledge of the way students had behaved in similar situations in the past was the basis of most of Christine's expectations. As Christine asked the class to define a heroine, she anticipated their response: "I know what's going to come up here ... if I pronounce 'hero - ine' the drug is going to come up." In a later example, she anticipated a more helpful response: "They're making points to each other and they're going to come up with it soon." Christine also anticipated the reactions of the students to forthcoming classroom events. As she began to read the introduction to a radio play which the class was going to study, she thought, "They're going to really like this." This confident anticipation was repeated in other thoughts which also predicted student action: "I bet they don't remember," and, "I'm going to lose them."

Hoping. Christine's inflight thoughts revealed her expressions of hope and wishes that different situations would occur or actions be performed. She was less confident in these wishes or hopes than in the anticipatory thoughts and predictions described above. As has been suggested, these thoughts related only to possible outcomes which would be desirable from Christine's perspective. Because of the way these thoughts were expressed, desirability appeared to be associated more closely with Christine's sense of personal investment in the learning process than with her professional knowledge. These hopes seemed to be things that Christine personally wanted to happen in contrast with anticipation of things that Christine professionally expected to happen.

In common with anticipatory thoughts, Christine's hoping thoughts related exclusively to the thoughts and actions of students. "I wish they would all take that initiative," she thought in an almost wistful manner, as if for them to take this initiative would be beyond all expectations. More commonly, her hopes were expressed in a way that suggested slightly more confidence in their fulfilment: "I'm hoping that they're going to make the comparison to what I'm saying," and, "I'm hoping that someone will be able

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to answer this question." Following her detailed illustration of a concept she thought, "I hope that makes the connection a bit clearer."

Christine's hopes, then, were concerned with both actions, things she hoped they'd do, and with student thoughts, things she hoped they'd think. Many of Christine's hoping thoughts lacked a sense of imminent activity and were expressed as though she were not able to influence the realization of those hopes: "I hope they come in quietly," she thought, as she heard some students about to enter the room. In others, however, could be seen a more assertive and active sense and an implication that she would do something to make her aspirations become reality. A student had come to class late and, as Christine sent her to get a late slip, she thought, "I want her to be accountable," suggesting that the action she was taking was a means to achieving that end. Similarly, as she asked some structured questions about a literary term, she thought, "I want them to give me a definition." In contrast to thoughts in which she simply hoped that a situation would come about, these thoughts suggested that deliberate action was being taken to shape future outcomes.

Summary of Characteristics

In the preceding section, an exploration and description of Christine's inflight thinking has been presented. From this, four characteristics have been identified which appeared to summarize the essence of Christine's inflight thinking. These characteristics were; elements of teaching, individual thinking, participant observation, and thinking ahead. This section has incorporated an individual description of these characteristics with particular attention being paid to their key features.

Throughout this section, the focus of the exploration has been on Christine's inflight thoughts. In the section that follows, possible relations shall be examined between these inflight thoughts and the guiding principles identified earlier in this chapter.

Relationships between Guiding Principles and Inflight Thinking

In the following section, relationships shall be explored which existed between those principles which guided Christine's teaching and her thoughts while she engaged in that teaching.

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As with the other case studies, guiding principles, which had been described by Christine, were sometimes referred to in an explicit manner in her inflight thinking but more commonly implied. Prior to an analysis of her inflight thinking, the way these guiding principles related to one another was not clear. During examination of Christine's inflight thinking, however, interconnections and relationships began to emerge, allowing a more coherent understanding of both principles and inflight thoughts. Examination of these relationships facilitated a better understanding of Christine and the nature of her thinking, than could examination of either guiding principles or inflight thoughts alone. These relationships emerged as four themes: a) Engagement and participation, b) "getting it," c) acknowledging individual differences, and d) the learning environment. These shall be discussed in the following section in this thematic form.

Engagement and Participation

The theme of engagement and participation was evident in Christine's guiding principles and inflight thinking. Christine frequently referred to involvement, participation, and contributions to the lessons and although this theme was usually associated with the engagement of the students, it also included reference to her own engagement in the process of learning.

In Christine's discussion of guiding principles, her own engagement was identified at an exclusively professional level. This professional level of engagement was also evident in her inflight thoughts. But, in addition, a personal level of engagement was also present, which did not emerge in her guiding principles.

In semi-structured interviews, Christine had referred to her own engagement in lessons as one aspect of her wanting students to be here principle. Her role in this, she explained, was to actively lure them in or to energetically encourage participation. In addition to her physical actions, however, she also identified her own ongoing consideration of ways to engage the students.

Professional engagement was evident in Christine's inflight thinking in relation to elements of teaching such as overall planning, consideration of ways to teach the lesson content, and consideration of choices. In all of these thoughts, Christine the teacher could be seen actively thinking about aspects of instruction which were then associated with some physical activity of her own. In the participant observer characteristic, active cognitive engagement of a professional nature could be seen even though this lacked the

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direct association with physical activity. Christine was engaged in the processes of monitoring, interpreting and evaluating the thoughts and actions of the student and of herself.

Although a high degree of Christine's engagement could be seen in the thinking ahead characteristic, there appeared to be a distinction between this professional engagement and a more personal level of engagement. Anticipatory thoughts were interpreted as being evidence of a professional engagement, based on her own experience of the way events had occurred in the past, and on her own prior professional knowledge as a teacher. Hoping thoughts were also evidence of a cognitive engagement but seemed to reflect a more personal investment in the events that were yet to come.

Further evidence, of Christine's personal engagement in the lesson, could be seen in the presence of thoughts about her own affect or emotions. Although, in monitoring thoughts, Christine's engagement appeared to be more professional and slightly detached, her response to that monitoring was revealed at an affective level in feelings of pleasure, annoyance, and surprise.

The other way that this theme could be observed was in the engagement of the students. The person/professional distinction, seen in Christine's thinking about her own engagement, was not evident in relation to the students but there did appear to be a distinction made between observable actions of the students and their less observable cognitive engagement. In discussion of her guiding principles, Christine had stressed the importance of students contributing to and participating in the lesson. Emphasis on student engagement could be seen in more than one of these guiding principles. In the wanting students to like being here principle, she asserted that, willingness to engage in the lesson would be a function of how safe they felt in the classroom. In the learn what she's teaching principle, she explained that, engagement was a necessary aspect of learning. In discussion of the everybody can do it principle, her reference to an active doing of the lesson activity, was a clear indication of student engagement. The significance of student engagement in learning was also reflected in the getting it theme and this is discussed in the section which follows.

"Getting them involved," evidence of this engagement theme, could also be seen in exploration of Christine's inflight thinking. Thoughts characterised as elements of teaching contained several examples where planning, lesson content, and choices, were being considered in relation to the student's engagement. Her individual thinking thoughts, to a large extent, focussed on engaging the student. It was here in particular

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that the distinction mentioned earlier between physical and cognitive engagement could be seen. While in her guiding principles most reference to engagement seemed to relate to students' observable participation in the lesson, in this individual thinking characteristic of Christine's inflight thought, engagement was also related to student thinking and learning. An interpretation of this was suggested by Christine's explanation in semi-structured interviews of the relationship between engagement in the task and understanding of the task. Engagement, she asserted, was in most cases a necessary precondition of learning and understanding. In her guiding principles, then, a focus on observable engagement, might have also implied cognitive engagement although that was not stated. In inflight thoughts, however, explicit reference was made to both observable and non-observable aspects of engagement.

Reference to student engagement in learning was also evident in Christine's participant observation thoughts, where she revealed an awareness of student affect and evaluated student learning in terms of their engagement and participation in the lesson activities.

'Getting It'

"Getting it" was a term used in guiding principles, evident in inflight thought, and a theme which related to the content of the lesson. There appeared to be two aspects to this theme: one aspect related to the nature of that content, understanding what it really was; the other to the ways in which students might acquire that content. This second aspect was closely related to the theme of engagement, referred to above.

An identification of it, or that which the students were supposed to acquire, revealed some interesting aspects of Christine's guiding principles and inflight thinking. A common implication in her guiding principles, particularly those relating to "learning what she's teaching" and "everybody can do it," was that completion of assigned tasks was, in itself, the content of the lesson. If students were able to complete the task, then they had fulfilled their responsibilities in the learning process. It can be guessed that Christine would interpret completion of assigned tasks as mastery of the concepts they illustrated. This interpretation, however, was not evident in Christine's explanation of her guiding principles, and it suggests that Christine's teaching focus was more on manifestations of learning than on learning itself. In the one instance where explicit reference was made to the teaching of a concept, as distinct from an activity, Christine

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acknowledged her own limitations: "I don't know how else I can teach you guys this!" It appeared that, for Christine, a focus on observable lesson activities was a more achievable goal and that through involvement in those lesson activities, understanding of more abstract concepts should occur.

Some clarification of the nature of "it" could be seen in Christine's inflight thinking. At one level, it still appeared that involvement and participation in the lesson activities was, in itself, the goal of the lesson and that this participation was a sufficient student activity. This was evident in elements of teaching thinking where Christine considered the overall planning and pace of the lesson such that student contributions would be maximised. Similarly, in thoughts characterised as individual thinking, Christine's focus on student engagement and putting students "on the spot," sometimes suggested that it was the quantity of student involvement that was the focus of the lesson rather than the quality of that involvement. At another level, though, a deeper learning and an understanding of more abstract concepts were referred to in inflight thoughts described within the individual thinking, participant observation, and thinking ahead characteristics. In these thoughts, Christine made reference to a deeper level of involvement in which students considered the meaning of the text, connected aspects of the text with their own life experience, formulated interpretations, and defended those interpretations. Christine's affective thoughts reflected her pleasure when students became engaged in this level of learning and her frustration when they didn't.

In summary, Christine seemed to have at least two different understandings of the lesson content, the it which the students were to acquire. The first was the skill of completing assigned tasks; written and oral. Taking part in discussions and asking questions could be considered to be assigned tasks in this sense. The second understanding of lesson content was the development of skills relating to use of the English language. Examples of these English language skills were the development and expression of an opinion, the drawing of meaning from text, and consideration of alternative views. More mechanical skills, such as knowing the meaning of dramatic terms, were also included, but acquisition of skills related to abstract concepts appeared to be more commonly implied in Christine's inflight thinking. This understanding of it as related to abstract concepts, was not a significant aspect of her guiding principles and was not made explicit in Christine's inflight thinking.

The second aspect of the "getting it" theme was related to the ways in which students might acquire content. Although there appeared to be two interpretations of it,

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only one way of acquiring the content was referred to in guiding principles. This was the engagement of students in the activities of the lesson, involvement in discussion, the asking of questions. This method was also the one revealed in exploration of Christine's inflight thinking. This has been discussed in more detail in the engagement theme above, but it must be noted that Christine very rarely revealed thoughts in which she was explicitly teaching abstract concepts. Rather than teaching abstract concepts, Christine's thoughts displayed her focus on engaging students in activities which, it was presumed, would require an understanding of those concepts.

Acknowledging Student Individuality

This theme, concerning Christine's thoughts about student individuality, was evident in both her guiding principles and her inflight thinking. Acknowledgement of individuality appeared to have two different aspects. The first was a detached acknowledgement where individuality was considered in a dispassionate manner and where there was no suggestion that Christine's thoughts or actions were being influenced by her awareness of that individuality. The second was a more involved acknowledgement, where it appeared that Christine was adapting her teaching to recognize individual differences. Given that guiding principles were examined when Christine was not engaged in teaching, it was not surprising that examples of detached involvement were a more significant aspect of these principles. An involved acknowledgement of individuality was, on the other hand, a feature of inflight thinking, although the detached, dispassionate thoughts were still present.

"Wanting students to like being here", a guiding principle identified by Christine, contained limited references to this first, detached, acknowledgement of student individuality. She referred to her observations that individual student's perceptions of task difficulty resulted in feelings of fear, and discussed the implications of this in terms of prior learning experiences and its impact on student's willingness to become engaged in learning. Similarly, Christine's discussion of the guiding principle described as "everybody can do it (to a certain extent)" implied that she possessed knowledge of students. Evidence for this implication could be seen in the degree of confidence with which this assertion was made, and in Christine's acknowledgement that there were individual differences in the extent to which students could "do it". Accommodation and advocacy, was the guiding principle most explicitly related to individuals. Within this

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guiding principle, however, Christine still referred to a more theoretical and detached acknowledgement of individual differences in the classroom. Rather than discussing the needs of the individuals in 9C, she tended to discuss issues related to the teaching of individuals in general; techniques such as changing expectations of student performance, changing the nature of the task itself, and providing variable levels of assistance.

With reference to this same principle, Christine discussed the need to advocate for individual students, particularly those who might be considered "dummies". It was in this advocacy role that a more involved acknowledgement of student individuality was revealed in Christine's guiding principles. It was interesting, however, to note that in discussing advocacy for students with special needs, Christine described how, to overcome perceptions about lack of ability, she attempted to minimise individual differences. She asserted that this could be achieved by treating them all in the same way and by seeing them all as regular kids. There appeared to be a sense in which Christine's efforts to promote individual student's feelings of value involved a denial of their individual differences.

Both detached and involved acknowledgement of student individuality could be seen in Christine's inflight thinking. Individual thinking, one characteristic of Christine's inflight thought, was entirely devoted to an acknowledgement of student individuality. While initially detached from teaching actions, this acknowledgement could be seen clearly in Christine's tendency, when thinking about individual students, to refer to them by name. Further, her knowledge of individuals was indicated by an awareness of students' backgrounds: "That's very typical of Grigor to think of something like that." Acknowledgement of individuality could also be seen in thoughts characterised as participant observation, in which Christine considered the feelings and emotions of individual students as well as monitoring their individual actions. Evaluation of individuals, according to the unstated standards discussed earlier, was another example of this detached acknowledgement of individuality.

The advocacy technique, to which Christine had referred in semi-structured interviews, that of minimising individual differences, did not appear in her inflight thoughts. Students with special needs were, at times, the subject of Christine's inflight thinking and their individuality was acknowledged. There were, however, no associated thoughts in which she attempted to minimise those differences. In contrast, thinking about those students seemed to be more closely related with an involved acknowledgement of student individuality.

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This more involved acknowledgement of student individuality could be seen in her thinking associated with the engagement of students. In these thoughts, Christine considered a variety of means by which individuals could become more involved in the activities of the lesson. Her choices to "pick on" some students and "draw out" others appeared to be guided by an awareness of individual characteristics. This awareness was also evident in her consideration of student thinking. In these thoughts Christine seemed to be acknowledging the differing extent to which students could begin to think about the content of the lesson. Because these thoughts demonstrated Christine's conviction that all students could think about lesson content, although to differing degrees, this acknowledgement appeared to be evidence of the operation of her "everyone can do it (to a certain extent)" guiding principle.

It was anticipated that acknowledgement of student individuality might be a factor in the elements of teaching and thinking ahead characteristics of Christine's inflight thought. This was not the case, however. In these thoughts, Christine, tended to considered the students as a group rather than as individuals. Thoughts about individuals were evident in Christine's choices to act and not to act, and her knowledge of their individual differences was reflected in these thoughts.

In summary, Christine's acknowledgement of student individuality was a theme evident in both guiding principles and inflight thinking. Detached acknowledgement of individuality was a feature of her guiding principles, but in inflight thinking this emerged as a more involved acknowledgement in which Christine's thoughts seemed to be shaped by her awareness of their individuality. Nevertheless, her inflight thoughts also suggested that in many instances there existed either an unwillingness or inability to go beyond a detached acknowledgement of individuality and engage in the more involved accommodation of those individual differences. Christine's inflight thinking about individuality lacked the more analytic and professional thought evident in her guiding principles. In these guiding principles, connections between acknowledgement of student individuality and adaptation of teaching were clearly articulated. Inflight thoughts, on the other hand, were of a more personal nature and contained evidence of considerable and detailed attention to student individuality. This attention, however, was not always converted into thoughts about how those individual differences might be accommodated.

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The Learning Environment

The final theme evident in Christine's guiding principles and inflight thinking was attention to the learning environment. The learning environment, in this context, was the physical place in which the lesson occurred, but, more particularly the emotional climate of that place. In semi-structured interviews, Christine had identified wanting students to like being here as her first guiding principle. She explained that, if students liked coming to her class they would then be more willing to engage in learning activities. While reference was made in this guiding principle to "here", the aspect of the environment to which Christine attended was not the physical but the psychological climate of the classroom. She identified fear as the emotional state most likely to prevent students wanting to come to her class and, more specifically, fear of not being able to undertake assigned tasks. Hence, Christine's role was to eliminate these feelings of fear, whether that fear was justified by an actual discrepancy between the nature of the task and student ability or a perception of discrepancy.

Attention to task difficulty or structure, however, was not a feature of Christine's inflight thinking. She did indicate an awareness that students, from time to time, lacked an understanding of tasks but did not think of those tasks as able to be modified; seeming to consider them, rather, as fixed or stable elements of the lesson. Christine also displayed an understanding of student ability as being a relatively stable construct: "He is very apathetic," and, "She is probably just lost right now in this discussion." This suggested the existence of an actual discrepancy between two relatively fixed or stable elements; task difficulty and student ability. In Christine's inflight thinking, however, there was limited evidence of thoughts in which she attempted to reduce this discrepancy. Efforts to engage the students in learning activities such as class discussions appeared to be the only way that Christine addressed the issue of student ability. Her inflight thoughts revealed a confidence that by engaging in discussion, the thinking of individual students would become more clear and their understanding of the concepts become better developed. In only one instance was a significant modification of the task explicitly stated in Christine's inflight thinking. In this instance, she provided a solution to the murder mystery and, hence, changed the focus of the discussion from the solution of that mystery to a consideration of its consequences. Significantly, her later thoughts indicated an awareness that she should have modified this task earlier in the lesson. Modification

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and adaptation of tasks as a means of reducing fear and making students like being in her classroom were, therefore, uncommon.

Thoughts related to student perceptions of the task were evident. Christine's inflight thoughts revealed several instances where she attempted to lure students into engaging in the task or draw them out. In other thoughts, she displayed some confidence that the nature of the task itself would appeal to the students: "They're going to really like this." Consideration of the degree to which students were enjoying the task was also a feature of her inflight thoughts: "That's taking away from the enjoyment of listening." Christine's thoughts, in which she referred to attempts to engage the students in the task, could be interpreted as attempts to reduce student's fearful perceptions of those tasks. There was no evidence of thoughts in which she attempted to alter student perceptions of themselves, although this had been referred to in her guiding principles. Rather, Christine seemed to have a conviction in the power of tasks such as class discussion to, by themselves, reduce fear. It was as if, by engaging in the task, students would become less afraid of those tasks and hence want to come to Christine's lessons. The possibility that even if students did engage in the tasks, engagement might be stressful and create feelings of fear was not considered in Christine's inflight thought.

Consideration of the learning environment in terms of its psychological climate was evident in both guiding principles and inflight thinking. Reduction of fear was seen as the primary means by which students could be encouraged to like being in Christine's class. In exploration of Christine's inflight thoughts, however, it could be seen that, while this attention to psychological climate was present, it revealed itself more implicitly in terms of engagement in class activities.

Chapter Summary

The content of this chapter has been a case study of the participant known as Christine, a junior high school science teacher who taught at the same school as Max, the subject of the preceding case study. Christine's voice was heard as she introduced herself and described how she came to be teaching in that context. What it meant for her to be teaching in that situation was explained and her guiding principles about teaching in general and about inclusive education were described.

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Following this section, a description was presented of the context in which this examination took place, Christine's Language Arts class in a Catholic junior/elementary high school in western Canada.

An exploration of the nature of Christine's inflight thinking followed. In this section, her inflight thinking was analyzed in terms of four main characteristics: a) elements of teaching, b) individual thinking, c) participant observation, and d) thinking ahead. In Christine's inflight thoughts could be seen an awareness of individual students' thoughts and actions and a focus on engaging those students in the activities of the lesson. Also evident was a distinction between thoughts in which Christine considered aspects of the lesson and its participants and thoughts in which this consideration was translated into some associated teaching action.

Finally, relationships between Christine's guiding principles and her inflight thinking were explored. These relationships were discussed in terms of four themes: a) engagement and participation, b) getting it, c) acknowledging individual differences, and d) the learning environment. Confidence in student participation in the lesson as a means of increasing both academic learning and confidence was one aspect of Christine's thinking observed in these themes.

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CHAPTER NINE

Introduction

In the preceding chapters, case studies have been presented in which the inflight thoughts of five junior high school teachers have been examined in the context of their inclusive classrooms and in the context of their guiding principles. It has been noted in chapter three that the degree to which findings of each case study can be generalised to other contexts is, essentially, an issue which must be resolved by the reader on the basis of the information provided in those case studies. Further, the uniqueness of each participant's experience has been stressed throughout the preceding chapters. Hence, while issues emerging from cross-case analysis are presented in this chapter, findings of the current investigation are contained in each case study.

While these issues are discussed separately, this should not be taken to suggest that examination of any one by itself would necessarily facilitate effective inclusion in secondary schools. It is clear that issues interact with each other and attention to combinations of issues will be important in the implementation of inclusive practices and for effective professional development.

Finally, it must be acknowledged that the interpretations of primary source data presented in the five case studies are made with more confidence than second-order cross-case analyses. Nevertheless, this cross-case analysis provided an opportunity to identify issues not evident from analysis of single cases. The issues identified in the following section are those which the researcher believes to have general relevance to the problem identified in the opening chapter. These issues are a) the nature of relationships between inflight thoughts and guiding principles, b) affect, c) individuality, and d) emotional self-defence. Within the discussion of these issues, hypotheses shall be offered and suggestions shall be made regarding some future directions for research into the implementation of inclusive education which have emerged from these case studies in secondary schools.

Issues Emerging From The Five Case Studies

Relationships Between Inflight Thoughts and Guiding Principles

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The nature of the relationships between teachers' inflight thoughts and guiding principles was a significant issue in all case studies. These relationships were, in general, relatively strong however they varied in emphasis.

A feature of a study of teacher thinking in heterogeneous classes reviewed in chapter two (McGinnis et al., 1993) was that participants' inflight thoughts appeared to be in direct contradiction with guiding principles. This, however, was not the case for the participants in the current investigation. There were, however, several instances where guiding principles were not evident at all in inflight thought. An example of this could be seen for Lysander who, although identifying as a guiding principle the need to make expectations clear, did not report any inflight thoughts which might relate to this principle. Similarly although Max had articulated as part of his guiding principles the need to make students feel good about themselves, there was no evidence of this in his inflight thinking. Less frequent was the reverse situation, where inflight thoughts did not appear to be associated with any guiding principle. In the inflight thoughts of Christine, for example, was consideration of future teaching activities. There was no suggestion in her guiding principles, though, of this consideration of future events.

In instances such as this, where there was not clear evidence of a guiding principle in a participant's inflight thoughts, the most common alternative was an inflight thought which reflected a different dimension of a guiding principle. Rather than being in contrast with guiding principles, these inflight thoughts represented a shift in emphasis as the principles were being enacted. In Laurie's explanation of her guiding principles, for example, she had made reference to the importance of the development of a sense of identity. While this initially seemed to imply an individual identity, in analysis of inflight thoughts it became evident that membership of a group, or a group identity, was a significant aspect of identity. Another interpretation of instances where there was not a clear correlation between inflight thought and guiding principles relates to the value placed on those thoughts and principles at any particular time. Although, in interviews prior to teaching, the participant might describe a particular guiding principle, during the lesson, other principles may assume a greater value. Lysander, for example, described her guiding principle of making expectations clear. During the lesson, though, inflight thoughts described by participants as "no problem" were evident but thoughts relating to expectations were not. It appeared, that during the lesson, an avoiding difficulties principle was guiding Lysander's thoughts that had not been described in earlier interviews.

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Variations between guiding principles articulated by participants and their inflight thoughts may also be understood by considering a participant's attempts to describe those principles as an attempt to use language to frame schemata which cannot easily be expressed in words (Korthagen & Lagerwerf, 1996).

In summary, there were instances where guiding principles were not evident in inflight thinking, and other instances where inflight thoughts did not appear to be guided by any principles articulated by those teachers. In general, however, and in contrast with the McGinnis (1993) study, there were no instances of direct contradiction between a guiding principle and inflight thought. While direct contradiction would appear undesirable, variations between guiding principles and inflight thoughts are to be expected and, indeed, have been described in several studies (Borko et al., 1990; Butefish, 1990; Calderhead, 1983; Yinger, 1986). Implications for teaching in inclusive classrooms, however, relate more to how guiding principles and inflight thoughts each contribute to an understanding of the other. Espousal of guiding principles, in which teachers appear to be embracing inclusion, should be examined in the context of inflight thoughts which show the way these principles are enacted. Similarly, inflight thoughts which appear to have little direct bearing on inclusive education may, in the context of guiding principles, be seen as highly relevant in an inclusive classroom. With reference to the models of organisational change (Fullan, 1991; Roberts-Gray, 1985; Ungerleider, 1993), insights about the way that the understandings and perceptions of an individual change over time would be valuable. The current investigation, however, was not designed to trace the evolution of teachers' inflight thoughts or to compare inflight thoughts in this inclusive context with thoughts in a non-inclusive context. Insights into the way that the thinking of the participating teachers regarding inclusion may have changed, can not therefore be derived from the current investigation. A longitudinal study of a teacher experienced in the teaching of mixed-ability classes, who then begins teaching in an inclusive class, may provide some insights into ways that teacher's understandings of inclusion change or do not change. If it is the case that there is little or no change, then it could be supposed that the schema for mixed-ability and inclusive classes are perceived as being similar. Whether this is a positive outcome for the education of students with disabilities or not would then depend on the nature of that teacher's practice in the mixed-ability context.

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Affect

Another issue arising from an examination of the five preceding case studies relates to affect; awareness and expression of feelings and emotions. This was a theme evident in some form in both inflight thoughts and guiding principles, but not in those of all participants. Affective inflight thoughts were reported by four of the teachers; Laurie, Denise, Lysander, and Max. This evidence was sometimes quite explicit, as when Laurie thought about her own affective state: "I'm frustrated here!" Less explicit thoughts, which reflected this affective theme, included those in which the tone or the nature of a thought provided evidence of the teacher's emotional state: "For heavens sake, Bob, give over!" Inflight thoughts characterised as affective often related to the emotional highs and lows of the teachers themselves, ranging from one end of a continuum to the other during the course of a lesson. At other times, the inflight thoughts of these teachers demonstrated a sensitivity to the emotional state of the students in the class.

Attention to affect was not explicitly mentioned in any guiding principles but was evident in the inflight thinking of these four participants. Only Christine did not report thoughts characterised by attention to affect. Christine, however, with three years teaching experience, was the teacher with the least experience of the five participants in this study. It would appear that, particularly for those teachers who had had longer experience of teaching, their own emotions and attention to student emotions occupied a significant proportion of their inflight thinking. This attention to affect suggests significant personal investment in the lesson, with an associated emotional cost, as a result of continual swings from positive to negative emotional states. A hypothesis arising from this observation is that teachers with more experience are more likely to be aware of their own affect than their less experienced colleagues. This hypothesis could be investigated by replicating the stimulated recall method used in this study and comparing a sample of experienced teachers with a sample of less experienced teachers. If this hypothesis were confirmed, it would suggest that attention to affect may be seen as a way of exploring teachers' professional development beyond simply years of experience.

While guiding principles emphasising an affective dimension of teaching were not reported by any participants, the development of a positive classroom climate was a theme which emerged in guiding principles described by Laurie, Lysander, and Christine. The distinctive aspect of this theme was its intangible nature. Rather than referring to the physical nature of the classroom, participants identified the importance of creating an

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atmosphere or classroom climate that would facilitate certain aspects of student learning. Specifically, the guiding principles of these participants revealed a belief that, in this positive environment, students would feel comfortable and valued, be prepared to engage in learning, and be systematic in that learning.

This theme, stressing the importance of the intangible aspects of instruction, could be interpreted as a manifestation of an affective dimension, without being explicitly labelled as such. In this sense, different ways that the teachers described this "positive environment" theme assume a particular significance. Laurie's description of the environment related to its effect on the students. Lysander's and, to a lesser extent, Christine's, related to effect on students but also to the effect of the environment on their own emotional state. Although not including the effect of the environment as one of her guiding principles, Denise provided some insight into this phenomenon when she commented on the effect which some students can have on the classroom environment.

> So often in teaching when you've got difficult kids in the classroom, they just undermine the learning environment for everybody, because the teacher's constantly on guard and so these kids prevent you from relating properly to many of the others in the room.

In a classroom, then, a bidirectional relationship exists between student and teacher; a positive environment allows the teacher to relax her guard and establish better relationships with the class, which, in turn, means that the kids perceived as difficult are less difficult, and which, it may be supposed, allows the teacher to establish an even more effective instructional environment. This specific notion of being on guard shall be further examined as a separate issue later in this chapter, however the importance of this positive environment cannot be overstated for either students or teachers.

Although both positive and negative emotional states were evident in the inflight thoughts of Laurie, Denise, Lysander, and Max, the way that negative emotions were revealed differed. For Laurie and Denise, there appeared to be no inhibition of these emotions; feelings of frustration and annoyance were readily reported, and seemed to emerge from time to time throughout the lessons. Lysander's negative emotions once revealed, however, were quickly followed by self statements characterised as "no problem." It was as if she were well aware of the existence of these feelings but had an overriding desire, expressed in her guiding principle of creating a positive environment,

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to put these negative feelings aside as quickly as possible. It was not clear whether this strategy was for her own benefit or for that of the students. Max's feelings of frustration and disappointment related almost entirely to his demonstrations and examples. This was in contrast to those of the other three participants, wherein it was the students, their learning and behaviour, which were usually the source of frustration. Given Max's focus on demonstrations and examples during the lesson, that these should also be the source of negative feelings may not be surprising.

One explanation for this emergence of affect, in the thinking of more experienced teachers, may relate to the enactment of well-developed schemata about teaching. It appeared that, for those teachers having more experience of teaching, technical aspects of teaching were conducted in a more automatic manner when events in the classroom were perceived as being routine. This explanation is consistent with suggestions from other sources regarding the automating of familiar tasks and the consequent ability to attend, in an efficient manner, to novel sources of information (Leinhardt & Greeno, 1986; Rumelhart, 1980). A non-routine or novel aspect of the classroom may be the affective dimension of learning and teaching. Less experienced teachers, therefore, may be able to recognize this affective dimension but, because they have available less well developed cognitive schemata, may not recognize the significance of this dimension and may not have available the cognitive space required to process this information. This interpretation reflects the conclusions of Borko and colleagues (1990), who noted that more experienced teachers tended to draw upon personal experiences, which would include the affect associated with those experiences. Experience of being with students, and experience of teaching, would have exposed these teachers to a range of issues relating to their own emotions and those of students. These emotional experiences, indeed, were described in the personal profiles of the experienced teachers in this investigation.

This emergence of affect in the thinking of more experienced teachers is also supported by literature charting the development of teachers from novice to expert. In a review of stage theories of teacher development, Kwo (1994) notes a move from rational to intuitive approaches to instruction. At this more intuitive level, personal experiences, with an affective dimension, become a characteristic of teacher thought. This could be investigated by a study in which the inflight thinking of a stratified sample of teachers with different lengths of teaching experience was examined and thoughts relating specifically to affect identified. If this hypothesis is confirmed, an implication for teacher

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education would be to pay increased attention to an affective dimension of personal growth. Whereas it might be supposed that possessing a repertoire of instructional techniques is necessary for the development of an effective teacher, possessing an awareness of one's own affective state and that of other individuals in the classroom may be equally important.

Although not a specific focus of the current investigation, an additional interpretation of these teachers' experiences of affect is suggested by research on teachers' attributional reactions to students' performance. Prawat (1983) in a study of 58 elementary school teachers, reported that the affective reactions of teachers tend to serve as indicators of their perceptions about students and student effort. Teachers expressed greater feelings of pride and satisfaction, for example, when they perceived student ability as being low ability but student effort high. In this instance, it is argued, teachers tend have more internal attributions for success and feel more responsible for that success.

The emergence of affect as an issue in the inflight thinking of these teachers does not appear to be directly related to the inclusive nature of the teaching context. References to the feelings and emotions of students were not demonstrably connected with the students with disabilities in these classes any more than with any other student. From this it may be deduced that this affective dimension is a feature of teachers' thoughts independent of the composition of the class. This hypothesis could be tested by a replication of the current study in a non-inclusive setting, but the significance of this lack of correlation between degree of affect and teaching context may have more to do with teachers' perceptions of an inclusive classroom than with their emotional state. Perceptions of teachers regarding inclusive and mixed ability classes are discussed in the section which follows.

Individuality

A third issue which emerged from an analysis of these five case studies related to student individuality. Recognition of student individuality was a theme which could be seen in the guiding principles of Laurie, Denise, and Max, and was a theme common to the inflight thinking of all the participating teachers. In their guiding principles, Laurie, Denise, and Max referred to the importance of seeing students as unique and individual rather than as generic members of a class. Implicit in this recognition of individuality was

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a recognition that each student was also different from each other student; that they were a heterogeneous group with differing needs.

The guiding principles of Laurie and Max went beyond a general acknowledgement of individuality to refer specifically to an affective dimension. Notions of whole people, building up the inner person, and consideration of students' sense of identity suggested an awareness of student feelings and emotions that was not related only to the students as learners of academic content.

All teachers, however, recognised student individuality in their inflight thoughts, referring to students as individuals, as a whole class, and as small groups. Within these categories, however, were further distinctions. While all participants made reference to individual students by name, different aspects of individuality were revealed in those references. Four of the participants displayed an awareness of individuals from an academic and a non-academic perspective. Laurie, Denise, Lysander, and Christine, all thought about student ability to perform different learning tasks but, in addition, all made reference to characteristics of the students such as their affect, their personal experiences beyond the immediate lesson, their mannerisms or personality. Max, by contrast, referred only to those characteristics of individuals which were directly related to learning and instruction. The way that participants often revealed knowledge of individual students was through predictions of their actions or thoughts. This feature of inflight thoughts can also be explained in terms of teachers' schemata. It has been noted that making a prediction about a future event implies an awareness of different features of the class; familiar scripts, scenes, and propositional structures (Shavelson et al., 1986). Clearly, knowledge of student characteristics could be described as one aspect of a teacher's propositional structures. In the current investigation predictions about student actions and thought were a significant feature of the inflight thinking of Laurie, Denise, Lysander, and Max, but not of Christine. This appeared to confirm Calderhead's (1983) findings that more experienced teachers have more detailed propositional structures about students than do novices.

Attention to individuality would appear to be one factor emerging from the current investigation with particular significance for the inclusion of students with special needs. Teachers did make reference in their inflight thoughts to those students who had been identified as having special needs. There was, however, no evidence that attention to those students was a function of the predetermined categorisation. Rather, teachers' inflight thoughts revealed attention to these students, and to other students, on the basis

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of individual characteristics. Teacher thoughts relating to individuality did differ amongst the five participants. While attention to observable student characteristics was displayed in the thinking of some teachers, in the inflight thoughts of other teachers, knowledge of student history, affective characteristics, and learning styles was evident.

If inclusive education is defined as appropriate education for *all* students in the context of the same heterogeneous class, and if it assumed that appropriate education for students in any class is a fundamental goal of education, then the heterogeneity of the inclusive class is its distinguishing characteristic. Awareness of the increased range of learning needs in inclusive classes, it could be anticipated, would be evident in the inflight thoughts of teachers in those contexts. The classes, in which these teachers worked, were characterised by their heterogeneity, by a broad range of learning needs. All classes had, as permanent members, students with recognised disabilities. Despite this, no teacher reported inflight thoughts in which specific reference was made to the diversity or range of student ability in the class. Instead, teachers appeared to think about the ability of individual students only in relation to their performance of the immediate task.

Another dimension of this finding emerged from a reinterpretation of the teachers' guiding principles. Laurie and Denise, two of the more experienced teachers, had difficulty distinguishing between principles relating to teaching in general and to inclusive education, seeing the two as essentially the same. The theme of student individuality, while being mentioned first in the context of teaching in general, was one which they reported as having special significance in an inclusive context. These participants, though, appeared to see little difference between the innovation, an inclusive situation, and the educational context with which they are already familiar, a mixed-ability class.

Less experienced participants, on the other hand, did articulate principles which they said would guide their teaching in inclusive classrooms. These principles related to student ability and particularly to the ability of students with special needs. These teachers explained that they were guided by principles in which, recognising limits to student ability, they would attempt to match instruction to ability or push students to the limits of that ability. These principles, however, did not appear to be enacted during the actual teaching. Instead, principles which they described as relating to teaching in general were those which emerged in inflight thought.

An explanation of this finding may relate to the clarity of the innovation, inclusion, for these teachers (Berman & McLaughlin, 1978). An inclusive classroom may be a context which they can not readily envisage but which they perceive as being

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somehow different to the mixed ability class in which they already teach. Hence, some different guiding principles are articulated which relate to that less familiar context. During the lessons, however, the teachers' perceptions of the context in which they are teaching is that of the educational situation most familiar to them. The guiding principles relating to teaching in general, therefore, are those which are enacted and, as with their more experienced counterparts, the inclusive context in which they are teaching is perceived to be the same as a mixed ability class.

This interpretation is supported by literature relating to organisational change. Ungerleider (1993) has noted that "Changes which are perceived to be closely contiguous are more likely to be accepted than are changes which are seen as alternatives" (Ungerleider, 1993, p. 98). In other words, these teachers had accepted a change to inclusive practices because they perceived inclusion to be the same as a practice in which they were already engaged; teaching a mixed-ability class. The only distinction between these two educational contexts, inclusive and mixed ability, presumably, lies in the range of ability or learning needs. These participants, making no reference in their inflight thinking to range of ability or need, are therefore making no distinction between the two contexts.

If these findings from these case studies are to be considered in the light of a more general trend towards implementation of inclusive education, it could be supposed that teachers in inclusive junior high school classes make no distinctions in their inflight thinking, between students with special educational needs and any other member of those classes. This hypothesis could be tested by an analysis of inflight thinking of a teacher in a class which included a student or students with a disability and in a class with a more restricted range of student ability. This analysis would follow the collection of data relating to the frequency and quality of thoughts relating to individual students and would, by comparing these data for each student, be able to examine the hypothesis that no significant distinctions exist. If this were the case, it would tend to confirm the suggestion that, in practice, teachers think in routine, automatic, but individualistic ways unless they perceive that the instructional context is inconsistent with their existing schema (Borko et al., 1990). The presence of a student with a disability might not, by itself, signify an inconsistency with existing schemata for teaching.

A further hypothesis, arising from this lack of distinction in thinking about students with or without a disability, would be that junior high school teachers understand teaching in inclusive classes to be equivalent to teaching in mixed-ability

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classes. The investigation proposed in the preceding paragraph would help to clarify this hypothesis, but survey research or interviews of junior high school teachers, in which they were asked to identify distinguishing features of inclusive classrooms and mixed ability classrooms might also reveal significant similarities. If this were the case, it would imply that preparation of teachers for teaching in inclusive classrooms may be facilitated by a closer reference to the more familiar mixed-ability context.

Experiencing a classroom context in which students with disabilities are permanent members of the class, however, and making personal meaning from that experience, may be more important for individual teachers in the long term than an understanding of technical definitions of inclusion. It is through these experiences that individuals develop their personal schemata and these schemata, it is asserted, guide future actions and experiences (Borko et al., 1990; Korthagen & Lagerwerf, 1996).

In the same way that thoughts about individual students differed in quality, teachers' inflight thoughts about the class as a whole group also revealed two patterns. One, the most common pattern, was to think about the class as a whole group, an impersonal they or them. Implicit in this type of reference is that the teacher is at some distance from the class. An alternative pattern, only revealed in the inflight thinking of Laurie, was to think of the class as a whole group but one which had a personality of its own: "You guys!" This way of thinking of the class with a collective personality appeared to be an extension of the thoughts described earlier in which some participants thought about students as having their own personality, characteristics, and experiences not directly related to classroom learning.

Thoughts about students could usually be categorised as relating to either individuals or the class. Only Laurie reported inflight thoughts which were associated with smaller groups of students within the class. This may have been a function of the types of lessons. All teachers, to a greater or lesser degree, addressed their classes as whole groups. This may have been to give a general explanation or instruction or to ask a question of the whole class. All teachers, to a greater or lesser degree, required students to work as individuals on a common task. In the lessons observed, however, only Laurie's class worked in small groups for any period of time. In Denise's class, students worked as individuals on individual tasks. It is unclear from the current investigation whether Denise and Laurie's inflight thinking about student individuality was a consequence of their style of lesson, or whether the reverse was the case; that their style

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of lesson was a consequence of their tendency to think about student individuality. Evidence from their guiding principles, however, would suggest the latter interpretation.

In summary, then, a common observation of researchers in inclusive classrooms has been the regular classroom teacher's apparent attention to the whole class rather than to individual students (Baker & Zigmond, 1995; Fuchs et al., 1992; Schumm et al., 1995). The current investigation, however, suggests a different interpretation. While attention to whole class has been interpreted with some dismay by some commentators (Gerber, 1995; Martin, 1995), the situation may not be more complex than it seems on first analysis. Observation of teachers' actions in the five cases described by Baker and Zigmond revealed an overwhelming attention to the class as a whole rather than to individual students (Baker & Zigmond, 1995). This observation could also be made about the actions of the teachers in the current investigation. Examination of their inflight thoughts, however, revealed that at an unobservable, cognitive level, all participants were thinking about individual students, recognising their experiences, personalities, skills, and preferences.

Emotional Self-Defence

Related to the issue of affect, discussed earlier, was the issue which shall be referred to as emotional self-defence. To some extent, this issue was present in the inflight thinking of all teachers, however no teacher mentioned this as a guiding principle. It was clear that all the participating teachers thought of themselves as being vulnerable at some stage of their lessons and made conscious efforts to address that vulnerability. Denise had, in the context of a semistructured interview, made quite explicit reference to this issue of emotional self-defence. She explained that, if students were more pleasant, then "you haven't got to put up that barrier." If, on the other hand, the students were being difficult, then "the teacher's constantly on guard." This metaphor of teacher as a fortress, surrounded by a barrier and protected by a guard, was explicitly described by only Denise. Nevertheless, the other participants all, at times, revealed thoughts in which the issue of emotional self-defence and ways of reducing emotional vulnerability were evident.

Threats to teachers' identity and emotions included perceived failure to teach, challenges to authority, exposure of private feelings, and increased stress. Perceptions that they had somehow failed to fulfil their role as a teacher were common. Teachers

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reported inflight thoughts, in which they appeared to measure personal success in terms of having completed the lesson within the planned time, of having helped students understand a concept, and of having avoided problems. This seemed to reflect the findings of Mitchell and Marland (1989), who described a "problem-avoidance" model evident in the way that teachers process information in classrooms. Awareness of vulnerability and ways that this could be addressed varied in explicitness. Laurie, for example, reported a clear sequence of inflight thoughts, in which she became aware of a real threat to her own sense of privacy, being posed by her wish to share aspects of her own experience with the students. Lysander, on the other hand, seemed to make use of a "no problem" positive self-talk mechanism throughout her lesson, although the source of the potential stress was not always apparent.

Another technique evident in the thoughts of all teachers, and one which could be interpreted as having a significance for the issue of emotional self-defence, was the role of the lesson itself. The lesson was a theme which was evident in the inflight thoughts of all of the teachers. These thoughts, related to more general organisational or technical issues occurring during the lesson, and references to the act of teaching and to the enhancement of learning were, in the main, absent. Teachers thought of the lesson as a context or background for teaching and this was the basis of the distinction between thoughts about the act of teaching and thoughts about the lesson. Teaching could not take place in the absence of a lesson, but a lesson could occur without teaching.

Evident in the thoughts of some teachers, however, was a sense that this lesson had an identity of its own, which was distinct from the identity of those involved in it. Frequently, in relation to time and the passing of time, a feature of this lesson was that it was not able to be fully controlled by either teacher or students.

Max, in addition, appeared to consider his demonstrations as a form of proxy teacher, having, like actual teachers, their own unique characteristics and potentials. It was as if Max could stand back and observe his demonstrations doing the work of a teacher. The significance of this role of the demonstrations was illustrated by the fact that it was only in connection with those demonstrations that Max displayed feelings of frustration or disappointment. Rather than evaluating his own teaching, his demonstrations were the subject of evaluation and he thus seemed to be protecting his own feelings of value and self-worth.

To protect their own sense of self-worth, teachers seemed to acknowledge that not all aspects of the instructional context were predictable or controllable. As a

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consequence, therefore, they need not necessarily attribute perceived failure to their own lack of teaching skill. This explanation is congruent with Weiner's postulation of attribution theory (1985) and Prawat's (1983) findings regarding interactions between teacher affect, student ability and effort. Teachers sometimes attributed classroom difficulties, such as students failing to understand an explanation, to factors which they perceived to be external to themselves. These factors included the lesson itself and demonstrations. In addition to being external attributions, these attributions for student failure to understand may also be perceived as unstable, since sometimes a demonstration might work and at other times it might not, and uncontrollable, since the teacher had no control over the temporal progression of the lesson.

Their reason for making attributions of this nature may have been to protect their own self-esteem. Research examining teacher attributions for both successful and unsuccessful classroom events would be necessary to confirm this hypothesis. If it were confirmed, professional development which facilitates teacher' exploration of their own attributions would be indicated. Further, if research of this nature were related to the ability of different students in the class, interactions between teachers' affective reactions and attributions could be examined in the light of education in inclusive classrooms. It should be noted, however, that teachers do not actually have control over all the elements of classroom instruction. Knight's (1991) recommendations regarding the development of a realistically internal locus of control should be considered in this regard.

Related to this issue of emotional self-defence, may be the relative distance which two of the participants, Max and Christine, appeared to place between themselves and the class. While reference was made to observation as a teaching technique by other teachers, it was sufficiently distinctive in the inflight thinking of Max and Christine to warrant separate characterization. These thoughts implied a certain detachment or distance between the teacher as observer and the different elements of the teaching context as the subject of that observation. These thoughts were not clearly associated with teaching actions but it was noted that these participants' reports included reference to considerable cognitive activity.

Emotional self-defence, however, could be an associated explanation for this concept of personal distance. It may have been that these two less experienced teachers wished to avoid potential risks associated with a closer identification with the class. Whether creating this distance was a conscious activity or not, for these teachers it seemed to operate as a mechanism by which they could be insulated from the class.

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Roles of Teacher and Student

The role of teacher and student was a final issue emerging from the five case studies. Definition of teacher and student roles, however, was only one dimension of this issue. Clarification of these roles, and the degree to which they were made explicit, was another.

The role of the student was expressed in teachers' guiding principles in terms of taking responsibility and of developing autonomy. Although these roles may seem similar, there appeared to be a distinction between them. Developing student autonomy was a principle which implied an independence from the teacher and from other forms of support. Laurie and Denise referred to building up the inner person and to encouraging students to challenge themselves by setting personal goals.

Taking responsibility, on the other hand, was a principle which seemed to be of a more contractual nature. Denise, Lysander, and Max referred explicitly to the importance of students taking increased responsibility for their learning. For these teachers, responsible learners were those who monitored their own learning and asked for assistance when necessary. However, they also made specific reference to a form of unspoken contract between the teacher and the student. The contract seemed to be that the teacher would assist a student if the student came to the teacher or clearly indicated that he/she wanted assistance. Conversely, in the absence of some clear indication of need from the student, the teachers felt that they were under little obligation to provide assistance. No specific reference was made in inflight thoughts to this contract nor to the inherent structure of the teacher-student relationship. However, it appeared that teachers assumed students knew of the conditions under which assistance was available and under which the lesson would be conducted. This issue of student responsibility is congruent with other studies which have found teacher expectations of student help-seeking behaviour to be a common feature of secondary classrooms (Fuchs et al., 1992; Schumm et al., 1995).

The application of this finding to other classrooms could be investigated by interviewing teachers and students and attempting to generate individual descriptions of teacher and student roles. If a significant discrepancy exists between teacher and student understandings of their roles in classrooms, this would have some particular implications for the inclusion of students with special needs. A characteristic of many students with

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disabilities is their inability to learn in an incidental manner. Implicit learning contracts and unstated responsibilities have the potential to seriously hinder a student's meaningful participation in the culture of the regular classroom.

The role of the teacher was evident in the guiding principles and inflight thought of Denise, Lysander, Max, and Christine. Denise explained that her role as teacher was to facilitate learning. Lysander referred to the teacher's role as a provider of a positive, systematic and ordered instructional environment. Max described his role as being one who is looking for student understanding. Christine, in contrast, referred to the role of the students, their role being to learn what she was teaching. Implicit in these descriptions of teacher roles was a corresponding student role. These teacher and student roles, while not made explicit, were also evident in inflight thinking. Hence, Denise's role of facilitator of learning suggested the active involvement of the teacher with students who are engaged in learning, and this interaction was evident in her inflight thoughts. Lysander's role, as a constructor of a positive learning environment, suggests a teacher whose focus is on that environment and who expects that effective learning will take place. This expectation was reflected in her inflight thoughts, characterised by references to instinctive or automatic teaching. Max's role, as the seeker of student understanding, suggested a teacher who, though more distant from the students' learning, was actively seeking something which the students may or may not possess. This strong sense of teacher activity was a characteristic of his inflight thought. Christine's reference to the students as learners of teacher-selected content suggested a teacher who directs and commands the process of learning, and her inflight thinking reflected this role.

Concluding Comments

It was recognized in chapter two that while available research has explored many critical issues relating to inclusive schooling, there are other relevant issues which have not been addressed. The current investigation has examined some of those issues and has contributed to a better understanding of the way that teachers are interpreting a change to more inclusive models of teaching and learning in junior high school classes.

In chapter three, an definition of inclusion was presented which was that used for the purposes of the present investigation. Inclusive classrooms, according to that definition, were those in which all students were considered to be permanent members, regardless of ability or disability, and in which all students were present for all lessons in

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that subject. It must be noted, however, that other interpretations of this term exist and that the results of the current investigation must be considered from the perspective of the particular definition used.

Most theoretical definitions of inclusion incorporate two main features; the place of instruction and the quality of instruction. The first feature refers to full-time instruction in a regular, heterogeneous, classroom. Quality of instruction refers to instruction which is appropriate for all students in that classroom. While the concept of place is fairly unambiguous and one which can be objectively described, quality of instruction is much more subjective. It has been suggested (Baker & Zigmond, 1995) that a classroom should not be described as inclusive if the instruction taking place in that environemnt is not appropriate for all students. However, it should be observed that even in regular, non-inclusive, classrooms, instruction for non-disabled students is not always appropriate.

The operational definition of inclusion used in the current investigation, it is acknowledged, is not the same as most theoretical definitions of inclusion. This study, however, was interested in teacher thinking in classes which the teachers perceived as inclusive. To focus on the quality aspect of the definition would have required some evaluation of the instruction and would, most likely, have interfered with the relationship between researcher and participant necessary to gain authentic reports of inflight thought. Adherence to theoretical definitions was conceded in favour of access to authentic reports.

The case studies of Baker (1995a; 1995b; 1995c) and Zigmond (1995b; 1995c) provided a detailed exploration of inclusion as it is being practiced in five U.S. states. These case studies, however, provided little information about the way that regular class teachers make sense of inclusion. Nor did they examine inclusion in the secondary context. The current investigation, however, did consider the regular class teacher, and specifically the regular secondary teacher, in its exploration of inflight thoughts and guiding principles. While this study was not designed to make comparisons, either between inclusive and non-inclusive, secondary and elementary, it does appear that there are some characteristics common to the thinking of the five participating secondary teachers. One characteristic was that these teachers all acknowledged and attended to the individuality of students in their classes. This attention to individuality was apparently unrelated to student categorisation and, at the level of an individual student, inflight thinking appeared to involve the students with special needs no more or less than any other student in the class. Another characteristic was the strong affective element in the

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thoughts of these teachers. During the course of each lesson, their inflight thoughts revealed a series of emotional highs and lows. This attention to affect was more evident in the thoughts of the more experienced teachers, suggesting that, as these teachers automated the routine aspects of teaching, more cognitive space was available for consideration of this affective dimension.

These findings provide added depth to the research of others who have explored the planning and actions of regular teachers in inclusive settings (Fuchs et al., 1994; Schumm et al., 1995; Vaughn & Schumm, 1995; Vaughn & Schumm, 1996).

A choice to examine inclusion in the secondary context was prompted by literature acknowledging the complexity of this environment and the degree to which change is already happening, particularly in the area of middle schooling (Anderman, Maehr, & Midgley, 1999; Felner et al., 1997; Lipsitz et al., 1997). This body of literature, however, did not specifically address the concept of the inclusive school nor the teaching of students with special needs. The current investigation did address these issues and one finding with particular relevance to secondary schools was the degree to which teachers' expectations about the roles and responsibility of the students in seeking help when required is assumed. There appears to be little evidence that, in fact, all students are either willing or able to accept this responsibility.

In conclusion, the findings of the investigation reported in these pages sheds light on the inflight thinking of five regular secondary teachers. These teachers were all teaching in contexts which their school described as inclusive and which they understood to be inclusive. These findings must be interpreted with caution and an understanding that they relate specifically to these five individuals. Nevertheless, a detailed examination of the thinking of these five teachers implies that the thoughts of regular classroom practitioners, as they teach, may be more truly inclusive than their observable actions suggest. With respect to the professional development of regular classroom teachers, specific attention to student difference, it is suggested, should be replaced by attention to individuality and to the affective needs of both students and teachers.

Hypotheses Emerging From This Study

An outcome of the current investigation has been the identification of several hypotheses which, if tested, might contribute to a better understanding of inclusion in

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secondary classrooms. These hypotheses have been discussed in the current chapter but are summarised below and accompanied by suggestions for future research.

Hypothesis One

The schemata of secondary teachers with respect to classes designated as "mixed-ability" and "inclusive" are functionally the same.

Future research. A longitudinal study could be conducted to explore the development of schemata of a teacher experienced in the teaching of mixed-ability classes, who then begins teaching in an inclusive class. If there is little functional change in the teachers' schema, it might be supposed that this teacher understands a mixed-ability and an inclusive class to be the same.

Another way of addressing this hypothesis would be to conduct survey research or interviews with junior high school teachers, asking them to identify distinguishing features of inclusive classrooms and mixed ability classrooms. If no clear distinctions are evident, it would imply that preparation of teachers for teaching in inclusive classrooms may be facilitated by a closer reference to the more familiar mixed-ability context.

Hypothesis Two

Teachers with more experience are more likely to be aware of their own affect than their less experienced colleagues.

Future Research. An exploration of inflight thinking and the identification of thoughts relating specifically to affect conducted with a stratified sample of teachers with different lengths of teaching experience. This would have significant implications for teacher education in that increased attention to an affective dimension of personal growth. Whereas it might be supposed that possessing a repertoire of instructional techniques is necessary for the development of an effective teacher, possessing an awareness of one's own affective state and that of other individuals in the classroom may be equally important. Further, development of this affective dimension could be expected to take considerable time.

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Hypothesis Three

Affective thinking is a feature of teachers' thoughts independent of the composition of the class.

Future research. The current study should be replicated with a larger number of teachers in both inclusive and non-inclusive setting. If there is a lack of correlation between degree of affect and teaching context, this has significance for teachers' perceptions of an inclusive classroom and would tend to confirm the more general importance of an affective dimension of teaching.

Hypothesis Four

Teachers in inclusive junior high school classes make no distinctions, in their inflight thinking, between students with special educational needs and any other member of those classes.

Future Research. An investigation should be conducted of the inflight thinking of a teacher in a class which included a student or students with a disability and in a class with a more restricted range of student ability. Analysis of this thinking would follow the collection of data relating to the frequency and quality of thoughts relating to individual students and would, by comparing these data for each student, be able to examine the hypothesis that no significant distinctions exist. If this hypothesis were shown to be true, it would tend to confirm the suggestion that, in practice, teachers think in routine, automatic, but individualistic ways unless they perceive that there is an inconsistency between their existing schema and their current experiences. It may be that the presence of a student with a disability might not, by itself, signify an inconsistency with teacher' existing schemata for teaching.

Hypothesis Five

There are students in junior high school classes who do not know the conditions under which teacher assistance is available or who are not able to appropriately seek help.

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Future research. Interviews should be conducted with teachers and students concerning assumptions held by each group about roles of teacher and student in seeking and providing assistance. If the hypothesis is true, teacher assumptions about the way students understanding roles in classrooms may be false. Because many students with disabilities have difficulties learning incidentally, implicit learning contracts, assumptions, and unstated responsibilities have the potential to seriously hinder a student's meaningful participation in the culture of the regular classroom.

Hypothesis Six

Teachers make external attributions to protect their own self-concept.

Future research. An extension of research such as that of Prawat (1983), examining teacher attributions for both successful and unsuccessful classroom events could be carried out, seeking to determine reasons for external attributions. If the hypothesis is true, professional development which attends to teacher attributions may be useful. Interactions between teachers' affective reactions and attributions could also be examined in the light of education in inclusive classrooms.

Chapter Summary

In this chapter, the findings of the five case studies have been presented and discussed. While acknowledging the need for caution when interpreting a small number of case studies, some more general issues which emerged from a cross-case analysis. These issues were a) the nature of relationships between inflight thoughts and guiding principles, b) affect, c) individuality, and d) emotional self-defence.

Following a discussion of these issues, some concluding comments were made which provided an overview of the current investigation, reviewed the rationale for the study, and summarised the key findings.

A summary of hypotheses emerging from the study was then presented in which directions for future research were suggested.

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APPENDICES

Appendix One

Statement of professional perspectives

My professional career in education began with a Bachelor of Arts degree with a Diploma of Education in the teaching of secondary English and History. My early years of teaching in rural schools were a combination of frustration, excitement, and feelings of woeful inadequacy. Like many other secondary teachers I had the view that if the students didn't want to learn about english, then they had no place in my class.

After several years and some extended leave travelling overseas I applied for and was accepted into a postgraduate program in special education, specialising in the teaching of students with severe and multiple disabilities. Following completion of this degree, I began working in a rural city in a school for students with severe disabilities. The people with whom I worked shared my enthusiasm and, importantly, were prepared to talk about idealistic issues in regard to their students. My work with individual students was very satisfying and I felt that I was making a real difference in their lives and those of their families.

A few years later I left the Government system and began working as a special education consultant in the Catholic school system. My time working in this system was very satisfying - part of a small but dedicated team who valued my contribution, encouraged my idealism, and tolerated my disorganization.

During my time with the Catholic school system I completed a Masters of Education degree externally, examining in my thesis the implementation of a cognitive and metacognitive approach to instruction. Within a couple of years of completing this degree, I resigned, and my family and I moved to Canada while I studied in a Doctor of Philosophy program. This was a time of wonderful professional growth; challenging, and broadening my perspectives. Two years later, I was back in Australia, beginning a new career as a university lecturer, working in the area of special education and teacher training.

Several principles guide my professional thinking and activity and while articulation of them all would be difficult, the following could be considered a representative sample.

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I believe that learning is about the construction of personal meaning. While all learners have a range of experiences, though, more effective learners are able to process these experiences in a more systematic and strategic manner. Effective and efficient learning can be taught and there exist many ways that this teaching can take place. Teachers, however, should have their own "working models" of learning to ensure that they do not become victims of the fads that seem to regularly emerge but, instead, synthesis new understandings in a meaningful fashion.

While the principles described above are important for all learners, I believe they have particular relevance for adult learning. Teachers, as adults, need to be respected as individuals with their own histories, fears, and aspirations. Those working in the field of adult learning, and I consider the professional development of teachers to be an example of adult learning, must begin by understanding the perspective of the individual.

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Appendix Two

Guidelines for distinguishing between interactive and non-interactive data

Source: Marland, P. W. (1977). A study of teachers' interactive thoughts. Unpublished Unpublished doctoral dissertation, University of Alberta, Edmonton.

Guideline One

Label as non-interactive those sections of the protocols in which the teacher is describing or recalling what he was saying or doing, or what he had said or done, rather than what he was thinking.

Guideline Two

Label as non-interactive those sections of the protocols in which the teacher is showing awareness of what she was doing rather than of what she was thinking.

Guideline Three

Label as non-interactive those sections of the protocols in which the teacher is engaged in general discussion about teaching, situations in teaching that sometimes arose or have arisen, and techniques that should or should not be used where it is apparent that the discussion is not related to the interactive thoughts of the teacher. Often, when the teacher is engaged in this kind of discussion, it is an aside. It may be initiated by the interviewer who may ask what the teacher would normally do,m think, or believe in a similar situation. On other occasions, it is initiated by the teacher who discusses what he would do, say, or thinking in similar situations.

Guideline Four

Label as non-interactive those sections of the protocols in which it appears the teacher is providing a reason, explanation, or rational for what he was doing or saying, to justify or

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explain that behaviour to the interviewer, or where he is reflecting on the meaning of what he had said or done.

Guideline Five

Label as non-interactive those portions of the protocols in which it appears the teacher is providing an illustration or example of an interactive thought to make the meaning clearer to the interviewer.

Guideline Six

Label as non-interactive those sections of the protocols in which the teacher summarises, restates, reviews what he or the interviewer said previously in the stimulated recall protocols.

Guideline Seven

Label as non-interactive those sections of the protocols where the teacher's consideration of a pre-instructional plan, decision, or state of mind did not occur during the lesson. If the reference was made during the interactive phase, that part of the protocols which contains the reference would be regarded as interactive.

Guideline Eight

Label as non-interactive those portions of the protocols where the teacher indicates any uncertainty about thoughts and feelings being interactive.

Guideline Nine

When attempting to classify parts of the protocols as interactive or non-interactive, look for contextual clues. The segment may contain more than one reference to the same point. Frequently, clues about the nature of portions of the data are found several lines prior, or subsequent, to the section under scrutiny.

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Guideline Ten

When in doubt, designate the portion in question as non-interactive.

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Appendix Three

Letter to school principals

Dear Principal,

I am writing to you about a research project in which I am currently engaged and which I would like to conduct in *your school.* I am enclosing for your information a copy of approval to conduct research in *state government/catholic* schools .

Background information

I am a lecturer in special education at the University of New England currently undertaking doctoral study through the University of Alberta. In addition to my academic work my professional career has included teaching English and History in high school, teaching students with disabilities, and consulting in special education with teachers in secondary and primary schools.

My research aims to examine the thinking of junior high school teachers as they actually teach in inclusive classroom settings. Inclusive classes in junior high school are a setting of vital concern to those interested in effective instruction for all students. The effectiveness of teaching in those environments appears likely to be influenced by teachers' actions and thoughts. While there are many features of schools and teaching which affect the overall effectiveness of instruction, the thinking of the teachers as they teach in inclusive classroom settings is an area about which little is known. The research I am conducting will involve jointly exploring with the participants the things that go on in their heads as they teach a lesson.

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What is involved for teachers and students.

As this is a descriptive rather than experimental study, I am interested only in the 'normal' classroom context. In terms of instruction and classroom activities, teachers and students would be expected to do nothing other than would normally take place.

In terms of my activity, I would first spend some time getting to know the routines and details of the educational environment by watching what goes on in the classroom and the school, talking informally, and conducting two semi-structured interviews with the participating teachers. I will then videotape a lesson and, immediately afterwards, the participant and I will watch the video as the participant 'thinks aloud', recalling the thoughts they had during that lesson. We will have two of these stimulated recall interviews. Each interview (semi-structured and stimulated recall) will take approximately forty minutes. All the interviews will be transcribed and the participants and I will discuss themes or ideas which emerge.

Ethical issues

Teachers suitable for this study would be those who teach classes which have as a permanent member a student (or students) with a recognised special need. I would talk with interested teachers about the project and provide them with an information sheet (enclosed). Before participating in the project, teachers would be required to sign a form (enclosed) indicating their informed consent. Parents/guardians of students in classes selected for videotaping would be required to complete a consent form for the appearance of their child in the videotape (enclosed).

Information provided by participating teachers will be kept completely anonymous. Participants will be provided with transcripts of all interviews and identifying information such as names of individuals or schools will be removed. The researcher will be available for questions or clarifications throughout the project.

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Benefits of the research

This project will provide a detailed examination of the thoughts of regular classroom teachers as they teach in inclusive settings. Because of the close relationship between thought and action, this study will be of value to schools which are developing or implementing inclusive approaches to teaching students with special needs.

For participating teachers, this project will be of particular value. Through observation, discussion and reflection on their own thoughts with the researcher, it could be expected that they would develop more detailed craft knowledge related to teaching in inclusive settings. Participating teachers will be provided with transcripts of all interviews as a basis for subsequent reflection. There is the potential for this study to provide useful directions for appropriate inservice education for teachers in inclusive settings. This would be of value to schools as well as individual teachers.

I look forward to speaking with you within the next few days about possible involvement in this project.

Yours sincerely,

David Paterson BA Dip Ed (Macq), Grad Dip Ed Studies (SpEd) (UTS), MEd (UNE), MACE

Encl. Letter to participants, draft letters of consent (participants & students), School authority approval

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Appendix Four

Information Letter For Prospective Participants

Letter to Participants

Title: Examining the inflight thinking of junior high school teachers in inclusive classroom settings.

Researcher: David Paterson, PhD candidate in special education, Dept of Ed. Psychology, University of Alberta (Current address;)

What I am proposing to do.

My research aims to examine the thinking of junior high school teachers as they actually teach in inclusive classroom settings. Inclusive classes in junior high school are a setting of vital concern to those interested in effective instruction for all students. The effectiveness of teaching in those environments appears likely to be influenced by teachers' actions and thoughts. While there are many features of schools and teaching which affect the overall effectiveness of instruction, the thinking of the teachers as they teach in inclusive classroom settings is an area about which little is known. The research I am conducting will involve jointly exploring with the participants the things that go on in their heads as they teach a lesson.

How I'll do it.

I will first spend some time getting to know the routines and details of the educational environment by watching what goes on in the classroom and the school, talking informally, and conducting two semi-structured interviews with the participating teachers. I will then videotape a lesson and, immediately afterwards, the participant and I will watch the video as the participant 'thinks aloud', recalling the thoughts they had during that lesson. We will have two of these stimulated recall interviews. All the interviews will be transcribed and the participants and I will discuss themes or ideas which emerge.

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What's in it for you

I believe that it will be useful for the participating teachers to take part in some joint exploration of the thoughts that they have as they teach these particular classes. Reflecting on personal thoughts is believed to be a powerful means of understanding why we act in particular ways and vital if we are interested in learning from what we do. Participating teachers will be given the complete transcripts of interviews which, as well as helping with the process of reflection, may be useful for later reference. On a more general level, this research will help us understand more about what is going on in inclusive classroom and how change is taking place in those settings.

Your name won't be used.

Results of the study and any information that you may provide will be kept completely confidential. Participants will be provided with transcripts of all interviews and identifying information such as names of individuals or schools will be removed. The researcher will be available for questions or clarifications throughout the project.

Would you like to take part?

If you would like to take part in this project, please complete and sign the attached participation form. I will be visiting the school on   to collect completed forms. I will then talk to you about mutually convenient arrangements for the project.

If you have any questions or need further clarification, please feel free to contact me at the University of New England, 733846. Thank you very much for your consideration.

David Paterson

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Appendix Five

Letter Of Consent For Participants

LETTER OF CONSENT

Title: Examining the inflight thinking of junior high school teachers in inclusive classroom settings.

Researcher: David Paterson, PhD candidate, special education program, Department of Educational Psychology, University of Alberta

I agree to participate in the research project named above. I understand that;

- All the information collected in the project will remain confidential with regard to my identity.
- I can ask for clarification of any aspect of the project at any time during and after the project regarding the findings and any implications.
- I am free to withdraw my consent and cease to be involved with the project at any time.

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Signature of participant Date

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Appendix Six

Draft Information Note For Parents

Draft information note to parents

Dear Parent/guardian,

During the week beginning _________ (class teacher) will be taking part in a research project being conducted by a doctoral student from the University of Alberta. This will involve the videotaping of (class teacher) teaching a lesson with your son/daughter's class. The videotape will then be used as a focus for an interview in which (class teacher) will talk with the researcher about (class teacher) teaching. The focus of this project is the thinking of the classroom teacher, not individual students or what they do in the classroom. The videotape will only be seen by (class teacher) and the researcher. If, for any reason, you do not wish your son/daughter to appear in this videotape please contact (class teacher) and alternative arrangements will be made for that time.

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