School and Classroom Environment of a Small Catholic Secondary School

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Statement of Sources

This thesis contains no material published elsewhere or extracted in whole or part from a thesis by which I have qualified for or been awarded another degree or diploma.

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Abstract

This thesis reports research which employed quantitative data collection methods to investigate the classroom and school environment of a small Catholic inclusive secondary school. By drawing on literature on Catholic and inclusive schools, learning environment research and stakeholders perceptions of the dimensions of classroom and school environments, two instruments were developed and validated to gather the perceptions of students, teachers and parents in this school. The *What is Happening in this Classroom* (WIHIC) instrument was modified to be more suitable for this school's students by having 35 items to assess perceptions of the classroom environment. Four outcome scales were added to this instrument to gather data on the connections between classroom environment and outcomes. The school environment instrument was developed from existing instruments and several items were written to complement these scales. In 2008, the school associated with this research had 230 students, 103 of whom were special needs students. A total of 152 students and 12 teaching staff voluntarily participated in the collection of classroom environment data. For the assessment of school environment, 41 teaching staff and 40 parents volunteered their perceptions. Statistical analyses revealed statistically significant differences between different groupings of students, and between students and teachers in the classroom environment. Similar differences were also reported for the school environment between parents and teaching staff, teachers and learning support staff and different groups of teaching staff. Students generally had positive perceptions of classroom environment, but the teaching staff were more positive. Statistical analyses also revealed associations between students' perceptions of classroom environment and teacher mastery goals, teacher performance goals and student academic efficacy. Using data from this study, a model was developed that linked appropriate classroom environment scales to outcomes. This research clearly demonstrates the positive perceptions of classroom environment held by students and teachers and the influence these perceptions have on students' outcomes. The school environment was perceived positively by parents and teaching staff.

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CHAPTER 1

AN OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This thesis reports research into school-level and classroom-level environments in a small Catholic secondary inclusive school. The focus of the study is the *psychosocial* environment that students and teachers encounter when engaged in everyday activities at school. The environment, as it applies to the educational setting, refers to the atmosphere, the tone, the ambience or climate that pervades the setting that focuses on human behaviour in origin or outcome (Boy & Pine, 1988; Dorman & Fraser, 2009). It is this psychosocial environment that deals with the atmosphere or tone of the environment rather than the physical environment. Used in this context, environment refers to the atmosphere, tone or climate as it is perceived by the individual inhabitants of the environment and essentially the study elicited responses of students, teachers and parents to the question "What is this environment like for you?"

Learning environment research has established strong relationships between an individual's perception of learning environment and his/her performance within that environment. In measuring the perceptions of the inhabitants of learning environments, research has provided statistically reliable data that describe the environment (Walberg, 1991).

The following sections of this introductory chapter provide an overview of the thesis by considering six important areas. In Section 1.2 the research problem and associated research questions are stated. Section 1.3 discusses the rationale for the study by raising three fundamental issues: the importance of student psychosocial development to Australian society; the links between environment and student outcomes; and the special importance attached to learning environments in Catholic inclusive schools. Section 1.4 considers the significance of this study to Catholic education and learning environment research. In Section 1.5 a brief outline of the setting for this study is given. Section 1.6 introduces the research design and structure of the study. Finally, Section 1.7 previews the remaining seven chapters of this thesis.

1.2 THE RESEARCH PROBLEM AND THE RESEARCH QUESTIONS

1.2.1 The Research Problem

The focus school has had many accolades given to it by parents of students, ex-students, management of Catholic Education and Church leaders and it is thought to be an effective school. However, there is no description of why or how the school is effective and this is the problem to be focused on in this research. Investigating how the students, staff and parents perceive the school and classroom environments is the purpose of this research. This study focuses on the conceptualisation and assessment of school-level and classroom-level environments in a Catholic secondary inclusive school.

1.2.2 Research Questions

Based on this research problem, 11 research questions were identified. Questions to be answered by this research are as follows:

Measurement question:

1.1 What are the dimensions of the school and classroom environment of an inclusive Catholic school?

The determinant questions answered with quantitative data are:

1.2a What differences exist between teacher and parent perceptions of the school environment of an inclusive Catholic school?

1.2b What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?

1.3 To what extent do teachers' perceptions of the school environment differ according to gender?

1.4a To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?

1.4b To what extent do the student perceptions of the classroom learning environment differ according to Junior or Senior level of school?

1.5 What differences exist between student and teacher perceptions of the classroom environment of an inclusive Catholic school?

The relationship questions are:

2.1 What relationship exists between the classroom environment and student self efficacy?

2.2 What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?

2.3 What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?

The model question is:

3.1 Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?

1.3 RATIONALE FOR THE STUDY

Historically, classroom-level and school-level environments have been conceptualised as distinct constructs and assessed quite independently. Research over the past 35 years has shown the quality of the classroom environment in schools to be a significant influence in student learning (Fraser, 1995; Fraser & Goh, 2003; Zandvliet & Buker, 2003). That is, students learn better when they have a more positive perception of the classroom environment (Dorman, Fraser, & McRobbie, 1995). The strongest tradition of classroom environment research has been the investigation of the predictability of students' cognitive and affective outcomes from their perceptions of classroom environment (Fraser, 2007). According to Dorman, Fraser and McRobbie (1995) "much research of the past two decades has shown classroom environment to be a strong determinant of student cognitive and attitudinal outcomes" (p. 349) accounting for appreciable amounts of variance in learning outcomes, beyond that attributable to student characteristics such as general ability. Reporting on their own research, they conclude that school and classroom environments are distinct constructs with weak associations between them.

School level environment is defined in terms of teacher perceptions. Two of the instruments which have been used in previous school environment research are the *Work Environment Scale*

(Moos, 1987) and *School-Level Environment Questionnaire* (Rentoul & Fraser, 1983). These instruments have been modified and have been the basis of others developed and used in Australia and other countries. Two of these instruments that were developed for specific purposes were the *Catholic School Environment Questionnaire* (Dorman, 1994) and the *Special School Level Environment Questionnaire* (Adams & Adams, 2000) which were used to investigate school environments indicated in their titles. These instruments were the foundation of the instrument developed for investigating the school environment of a Catholic inclusive school in this study.

This discussion suggests that the development of positive psychosocial environments does not simply enhance affective outcomes at the expense of cognitive outcomes. It has been demonstrated empirically that positive environments are associated with improved cognitive outcomes (Dorman & Fraser, 2009; Zandvliet & Buker, 2003). Quite apart from these more immediate and formal goals of student learning, classroom climate is a strong mediator of student beliefs, values and norms. That is, a democratic climate at school and in the classroom develops democratic values (Schmidt & Cagan, 2006). Positive environments lead to student psychosocial development which has clear benefits for the formation of future Australian adults.

Goals pursued in the classroom have been the focus of research over the past two decades (Midgley, Kaplan, & Middleton, 2001). Two types of goals are considered in this study: *mastery goals* (also known as *learning goals* or *task goals*) and *performance goals* (also known as *ego goals* or *ability goals*). The mastery goals are the goals to develop ability. They focus the individual on the task at hand and relate especially to developing competency and gaining understanding and insight. The goals to demonstrate ability or to avoid the demonstration of lack of ability are the performance-approach goals or performance-avoidance goals respectively. These goals focus the individual on the self and relate especially to how ability is judged and how one performs, especially relative to others (Midgley et al., 2001). Research has shown the significance of goal structures in the learning environments for both regular and learning disabled students (Sideridis, 2005a). Linked to these goals and classroom environment has been student academic self-efficacy. The importance of academic efficacy for students is well documented (Bouffard, Roy, & Vezeau, 2005; Friedel, Cortina, Turner, & Midgley, 2007). Academic efficacy has been included as student outcome to be investigated in this study. As this study is conducted in a Catholic school, consideration has to be given to what meaning this has for the learning environment.

A fundamental point concerning this study of a Catholic secondary inclusive school in Queensland is that all Catholic schools are agents of the Roman Catholic Church. It follows that they are empowered to provide an education for their students that is distinctive due to their Christ-centredness. This is the starting philosophical point of any Catholic school and therefore it is central to this study. This premise means that Catholic schools should differ from other schools not only on religious instruction and doctrinal matters, but also in the establishment of an atmosphere that is consistent with a Christian view of the world. It has been pointed out that this may be a utopian view as there are outside forces acting on the students. These forces include conflicting values and a degree of indifference or even hostility among some students and parents (Leavey, Hetherton, Britt, & O'Neill, 1992). A strength of a Catholic school has always been its emphasis on educating the whole person, with the help of integrated services (O'Keefe, 1999).

A strong tradition in the Catholic Church is that it is teleological: human structures are a means to an end, and are useful only if they serve their original purpose (O'Keefe, 1999). As a result, institutions of the Church, like schools, are in need of constant evaluation and renewal. As this study is concerned with one school, it is appropriate that some measure of its effectiveness is conducted. Guidelines from Brisbane Catholic Education about the way special needs students are catered for in schools point out that educational providers recognise the needs and rights of all students and work towards identifying students requiring different programs and services to allow them "to participate fully in quality inclusive Catholic schooling" (Brisbane Catholic Education, 2007a, p. 2).

The *Strategic Renewal Framework 2007 – 2011 for Catholic Schooling, Archdiocese of Brisbane* (Brisbane Catholic Education, 2007b) lists intentions and expectations under various headings and the one that is of interest here is *Renewal and Quality Assurance.*

> Intentions
> We intend to:
> I1 ensure that renewal and quality assurance process have a clear focus on realising the vision and mission of Jesus
> I2 effectively implement school renewal, validation and compliance processes...
> I4 implement strategic quantitative and qualitative processes for monitoring, developing and reporting on religious education and curriculum
> I5 refine and integrate reporting mechanisms on school performance to school communities, the Archdiocese and government
>
> Expectations
> By 2011, we expect that:

E1 the quality, capacity and scope of school community engagement with school renewal has increased
E2 collaboratively developed school renewal plans for every school are in operation...
E4 school renewal, compliance and school performance reporting address government regulations
E5 school communities have increased their capacity to review, reflect and improve the performance of the school
E6 schools are acknowledged by the broader community for their religious life and their contribution to the development of students

(Brisbane Catholic Education, 2007b, p. 26).

These are ideals for schools that will help them evaluate their practices and encourage their renewal in an attempt to make sure they retain their original purpose. This study will be an aid to the understanding of the school and classroom environment and assist with any new directions that might become apparent.

1.4 THE SIGNIFICANCE OF THE RESEARCH

The present study builds upon and extends the strong tradition of research of classroom and school environment manifested nationally and internationally over the last 35 years (Dorman, 2003; Fraser & Walberg, 1991; Walberg, House, & Steele, 1973). This research has focused on the development, validation and use of instruments for assessing students', teachers' and parents' perceptions of school and classroom environments (Dorman & Fraser, 2009; Fisher & Fraser, 2003; Fraser, 1991; Fraser, 1998b; Moos, 1979; Rentoul & Fraser, 1983), and studies of some of the determinants (e.g. student gender, teacher gender, class size, year level) of school and classroom environments (Doppelt, 2004; Fraser & Walberg, 2005; Lawrenz, 1987; Walberg et al., 1973). Previous research (Darmon, Butera, & Harackiewicz, 2007; Dorman & Fraser, 2009; Opdenakker & Van Damme, 2007; Phan, 2008) has also shown links between environments and students' cognitive and affective outcomes and this present study continues this theme in examining some student outcomes as they are related to the classroom environment.

Educating students with special needs has been through a number of stages, ranging from confinement in asylums and hospitals, to creating special schools and to education in mainstream classes (Ashman & Elkins, 2002; Rudd, 2002). The education of special needs students in regular classes, known as inclusion, has been a recent phenomenon and little research has been done on the environments of the school and classroom as they are affected

by this (Adams & Adams, 2000; Sideridis, 2005a; Waite, Bromfield, & McShane, 2005). The school that is part of this research has a unique reputation as a provider of education for a large number of special needs students in mainstream classes. The study should provide valuable insights into school and classroom environments when inclusion is carried out on this scale. This information could be of assistance to other schools which are also coming to terms with inclusion in their local setting.

Many schools have special needs children included in their school enrolments and some have special units that take up to 24 students. The school that is the focus of this study stands alone as one that has more than half its student population as students with special needs (College records). Many requests have come from individuals and from schools, in formal and informal requests, to explain how this school copes with its unique combination of students. The school that is the focus of this study is a co-educational systemic school of Brisbane Catholic Education. It has a student population of 213, taught by 24 teachers and supported by 20 learning support staff.

This study hopes to produce information that is gathered and verified to shed some light on the classroom and school environments of this school that will go some way to explain the effectiveness, or ineffectiveness, of the school. The school underwent a renewal process with the guidance of Griffith University and this was completed by the end of 2007. It is opportune that the classroom and school environment are researched at this time so that the information can be used in the ongoing renewal of the school.

1.5 CONTEXT OF THE RESEARCH

All catholic schools in Queensland have inclusive practices in their school policies but this school is unique because it enrols a large number of special needs students (50% of student enrolments) compared to other schools. The school is not a special school and it promotes itself as a school with special character as a consequence of enrolling so many special needs students. Regular classes are conducted and the usual subjects for a small school are taught. The school has most of its students in Years 8-10, and about 15 of the Year 10 students are invited to stay at the school for their Years 11 and 12. These senior students often find it difficult in a regular senior school environment due to the academic demands of the senior school.

The students come from a wide geographical area around Brisbane, with some students taking well over an hour to travel each way to and from school. The parents of the students are the ones who have chosen to send their children to this school. Anecdotal evidence the researcher had received from talking with parents indicates the parents had spent considerable time searching for a school that is acceptable to them for the education of their children. "It is not a special school and it caters for all the needs of students. It is a small school and it is a Catholic school" (Parent 2). Having researched the availability of places in various schools, they made the decision to send their children to this school. The school is organised into home-rooms (Form Classes) with four home-rooms for Year 8, three for each of Years 9 and 10, and one each for Years 11 and 12. For Year 8, students stay in the same home-room class for all their lessons. The four Year 8 home-rooms are organised into two regular classes, one class a little weaker than the two regular ones, and one class that has about 15 students who are considered, after interviews, to require most help. This support is either with their learning or their socialisation as they enter a new secondary school.

For Years 9 and 10, the students are divided into three equal home-room classes. In these classes students have Pastoral Care, Religion, Study of Society and Environment, and Health and Physical Education. Students in these classes cover the whole range of abilities, from *normal* to *special needs*. Lessons have to be structured in such a way that all the students can participate in the class. English, Mathematics and Science classes are different and have at least three levels in each of their subject areas. Students choose the level they think is most appropriate for them. Parents and teachers have input into this choice. For example, Science offers three levels: Science, Science for Living, and Science around Us. The numbers in the classes would be something like 20, 16 and 10 respectively, with the middle classes offered twice. Manual Arts and Computer Studies also offer different levels of courses. In this way, the students are taught at a level appropriate to their capabilities.

Research (Sorensen & Hallinan, 1986) on grouping of students has not indicated whether homogeneous or heterogeneous grouping is more beneficial for the students. More recent work by Hallam and Ireson (2005) suggests that students with lower ability were given more opportunities for rehearsal and repetition, more structured work, more practical work, and less opportunities for discussion when the classes were based on ability grouping.

Students for Years 11 and 12 are invited to attend this school for the "Invitational Vocational Education Program" and it is not open to students from other schools. There is a clear understanding that the school is not offering an academic course for these students. The school is of the opinion that it can offer something that will be of benefit to these students. The students who are not offered a continuing place in the school for Years 11 and 12 usually seek places in their local schools for the remaining senior years and they begin the selection process early in the Year 10. There are a small number of students who would like to remain at this school for their last two years but are not accepted because the school administration thinks that the students would not benefit from the curriculum that is offered for these years.

The school is at pains to reject being called a "Special School" and prefers to be known as a school with a special character. Applications are welcomed for students of all abilities and the enrolment process follows the procedure mandated by Brisbane Catholic Education. Not all applications are successful and it may be in the best educational interests of the student that another place is more appropriate for enrolment. The students enrolled at the school include students who could have gone to any mainstream school and also students who have one or more of the following disabilities: Learning difficulties (LD), Down Syndrome, Autistic Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), behavioral/emotional problems, and physical disabilities. Hearing impaired and vision impaired students are not enrolled in the school at this time.

For children with disabilities, an Education Adjustment Program (EAP) has been developed in Queensland. Education Queensland has developed the EAP in response to a Ministerial Taskforce on the inclusion of children with disabilities into regular classrooms. Catholic schools and other independent schools are anticipated to follow the same program in ascertaining their students (Brisbane Catholic Education, 2006).

Six categories of disability are recognised by those using EAP: Autistic Spectrum Disorder (ASD), Hearing Impairment (HI), Intellectual Impairment (II), Physical Impairment (PI), Speech Language Impairment (SLI), and Vision Impairment (VI). Non-government sectors in Queensland have added on additional category to the six mentioned: Social Emotional Disorder (SED).

To be placed into one of these categories in the Brisbane Catholic Education area, the student has to be diagnosed or assessed by a specialist in the field of the disability and then this

assessment has to be verified by the Senior Education Officer (SEO)/Education Officer (EO). After verification, in order to complete the EAP process the school has to submit an EAP Profile and an Individualised Education Program (IEP) for the student. Eligibility for support and funding for a particular child who has disabilities is dependant on the results of the Verifier's report and the school is then informed of the amount of support that will be given for that particular child. All this information is entered into the Equity Information Management System (EIMS) and is available for update and review at certain times in the school-life of the child (Brisbane Catholic Education, 2007c, p. 123).

Despite having over 100 students ascertained as being eligible for support, the school receives support for 25 students only; this number has been set as a cap for the amount of funding given to any school in the Brisbane Archdiocese. With this amount of support, the school seems to have been successful in integrating children with special needs into the mainstream classes. There are attempts to improve the funding and the number of teaching staff at the school. Parents seek to enrol their children in this school even when there are large distances required for travel by some of the students to reach the school. This situation raises the question of how inclusion is practised in the school mentioned here and this was the original focus of this research. Following on from this, it was first thought that the purpose of this research would be the study of how this particular school uses the different strategies for inclusion. However, after some time of being involved with the literature, it was decided that classroom and school environment investigation would be a more appropriate way of finding out how the school copes with the day to day issues of an inclusive school.

1.6 RESEARCH DESIGN AND STRUCTURE OF THE STUDY

This section briefly reports the research design and structure of the study by discussing methodological principles, the overall design, and the quantitative data collection methods employed in the study. Full details of these methodological issues are provided in Chapter 3 of this thesis.

1.6.1 Methodological Principles

The research design adopted for this study had three guiding principles. First, classroom and school environments are to be understood solely in terms of the perceptions of students, parents

and teaching staff in that environment. There is no attempt to equate perceptions with an objective reality of *what is really happening*. As behaviour is governed by perceptions of reality rather than by what is really happening, then the perceptions of students and teachers become critical (Murray, 1938). Clearly, this study accepted the importance of perceptions as determinants of behaviour.

Second, as classroom-level environment and school-level environment are conceptually distinct constructs, their assessment and investigation require the development and use of two separate instruments. The use of context-specific instruments to assess school and classroom environments reflects the strong quantitative research tradition of these fields. In addition, the fields of school environment and classroom environment have developed their own research agendas quite independently.

Third, quantitative data collection methods are used as the source of data for the study. One school was the focus of the study and sampling of the population was not necessary as all students, staff and parents of the school were invited to be part of the study. These principles are discussed fully in Chapter 3.

1.6.2 Overall Design of the Study

There were two distinct stages to the research program. In Stage 1, context-specific instruments for assessing school and classroom environment were developed and/or modified. This stage had two parts. In Part A, informal interviews with key school personnel and parents suggested salient dimensions of Catholic secondary inclusive school environments. In conjunction with the review of literature, tentative dimensions, scales and items were defined. Since existing instruments were used as the bases for the instruments to be used in the study, field testing was not considered necessary. Part B required the use of generally-accepted validation strategies employed to refine the two instruments (Fraser, 1986, 1994; Fraser & Fisher, 1983). Since the school environment instrument would be used to assess the perceptions of` teaching staff and parents, suitable scales had to be selected for parents as parents lack sufficient knowledge and experience to respond to some of the scales of the instrument. Full details of the instrument development procedures are given in Chapter 4. Research Question 1.1, noted in Section 1.2.2, refers to the viability of this stage of the study.

In Stage 2, the two instruments developed in Stage 1 were administered to appropriate groups of students, teachers and parents of the school. Research Questions 1.2a to 3 (Section 1.2.2) were answered using data from this stage of the study. There was only one set of data collected for school environment and one set for classroom environment. Data obtained from these instruments were used to refine the instruments. Classroom environment data were collected from students who had agreed to participate in the study. School and classroom environment data were collected from teachers and learning support staff. Data for the school environment were also collected from parents who had agreed to participate. Data were analysed statistically with the set of school or classroom environment scales as dependent variables and a range of grouping variables (year level, student gender, religion, teacher and students, teachers and parents, teacher gender) employed as independent variables. Research Questions 1.2a to 3 were answered in this manner.

1.7 THE STRUCTURE OF THIS THESIS

As well as this introductory chapter, this thesis has six other chapters. Chapter 2 serves two important purposes. First, it provides a contextual basis for the study. Catholic schools do not exist in isolation from the contemporary Catholic Church and its history. To understand the environments of these schools in the 1990s, it is necessary to *set a scene*. The relevance of this aspect of Chapter 2 becomes apparent in the discussion of research findings (Chapter 7) and the conclusion of the thesis (Chapter 8). Second, a more technical but nevertheless important purpose of Chapter 2 is the identification of salient dimensions which, according to the literature, need to be incorporated into instruments assessing Catholic school environments.

Chapter 3 describes the methodology adopted for this study. There are three important components to this chapter. First, methodological issues and various approaches in learning environment research are reviewed. The use of high inference measures in the collection of quantitative data is discussed. Based on this review, a theoretical basis for the present study in the form of three methodological principles is stated. Second, a research design section details procedural issues of the study (e.g. data collection methods, variables, samples, units of analysis). The third section discusses validity issues relating to the study.

Chapter 4 provides a detailed discussion of the development of the two instruments used in this study. The chapter reports Stage 1 of the research program by describing strategies used to develop tentative scales and the results of scale validation procedures. Detailed information is

provided about each scale's structure and validation data using the individual as the unit of analysis. Chapter 4 reports that the final outcome of this process was a 9-scale instrument of 68 items to assess school environment and an 11-scale instrument of 52 items to assess classroom environment and student outcomes.

Chapter 5 accounts for Stage 2 of the research program by reporting analyses of quantitative data collected with the instruments whose development and validation are described in Chapter 4. Principally, multivariate analysis of variance was used to test for differences between the means of groups classified according to a range of independent variables (year level, student gender, student religion, teaching staff, parents) with the set of 9 or 11 scales constituting the dependent variables of school or classroom environment respectively. Graphs of results illustrate the findings of these analyses. Correlational analyses investigated relationships between classroom environment scales and student outcomes. Structural equation modelling was used to produce a postulated model which fitted the data collected in the study.

Chapter 6 relates the present results to Catholic education literature and previous research on learning environments and student outcomes. This allows for a consideration of this study's empirical findings in the light of previous research. Links between the results of the study and inclusive Catholic education literature are discussed.

Chapter 7 concludes the thesis by summarising the study and suggesting implications of the study for a Catholic secondary inclusive school and for future learning environment research. The limitations of the study are considered briefly.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The research reported in this thesis focused on school and classroom learning environments of a Catholic inclusive school. The literature underpinning this thesis brings together scholarship of learning environment research, the policy of the Catholic Church on education in schools, and inclusive education. This study is focused on the exploration of the learning environment of the small Catholic secondary school that is inclusive and caters for half of the school's student population as special needs students. The understanding of the learning environments of this school is the purpose of this research. To be able to more fully understand the issues concerned with this study, the literature review chapter is designed to produce a critical synthesis of the selected literature that illuminates the issues that are involved with the education of special needs students in a Catholic school with an inclusive setting. The title of the thesis, *School and classroom environment of a small Catholic secondary school* assists with the organisation of this chapter.

Section 2.2 discusses the origins of learning environment research, learning environment studies and instruments relevant to learning environment in schools. Section 2.3 reviews literature on Catholic schools that is involved with policy and ideals as they relate to schools. Section 2.4 overviews some of the stakeholders in schools, including governments, parents, teachers and students. Inclusion is discussed in Section 2.5. The word ***inclusive*** is vital to this research project and the literature reveals some of the history that has gone into giving this word its importance. A chapter summary is provided in Section 2.6.

2.2 LEARNING ENVIRONMENTS

This section discusses the field of learning environment research. As noted in the introductory chapter of this thesis, school-level and classroom-level environments have been developed separately and are two distinct constructs. Therefore, this section is divided into two main sections. Section 2.2.1 addresses historical and methodological issues relating to classroom environment. Section 2.2.2 discusses these same issues as they relate to school environment.

2.2.1 Historical Aspects of Classroom Environment

The study of the classroom environment is one way of understanding what happens to students during their schooling. The perceptions of teachers and students of the psychosocial aspects that pervade the daily school life have been the focus of investigations that have been conducted over the last four decades. There is "compelling evidence that the classroom environment is such a potent determinant of student outcomes that it should not be ignored by those wishing to improve the effectiveness of schools" (Fraser, 1986, p. 1).

As further research has been conducted in the area of classroom environments, it has become evident that the success of changes in educational methods, or approaches, may depend on first changing the students' perceptions of the environment in which they are involved. "It is vital for improving student learning to influence students' perceptions of the learning environment" (Wubbels, 2005, p. 2).

From the beginning of the twentieth century, educational researchers and theorists were mainly concerned with investigating individual differences among learners by examining person abilities and traits. Little attention was paid to the relationship between the learning environments and the characteristics of the learners, with some exceptions from the learning theories and the development of personality theories (Ellett, 1986).

The concept that a person's perceptions of the environment had an effect on behaviour was promoted over 70 years ago: "In the case of insightful behaviour the conduct of the individual is again brought into immediate relation to the special structure of the situation" (Lewin, 1935, p. 70). The behaviour of a child depends on the child's individual characteristics and the environmental impact at that particular time. The *nature vs. nurture* issue is answered by the thesis "that heredity and environment must work in the same direction in order to effect a certain mode of behaviour" (Lewin, 1935, p. 71), even though the *predisposition* (P) or individual characteristic (heredity) cannot be defined by one mode of *behaviour* (B) but only by a group of behaviours that relate to specific *environments* (E). Each individual's characteristics can only be distinguished from another by the behaviour that is connected to different environments. These insights were summarised by Lewin in the equation that **B**ehaviour is a function of both **P**redisposition and **E**nvironmental forces,

B = f(P,E) (Lewin, 1935, p. 73). This led to the concept that in the investigation of dynamic problems, a start should be made from the psychologically real environment of the child. This environment is "to be defined not physically but psychobiologically, that is, its quasi-physical, quasi-social, and quasi-mental structure" (Lewin, 1935, p. 79).

Needs-Press Theory

Further development of this work on behaviour by Murray (as cited by Cresswell & Fisher, 1999) led to the *Needs-Press* model as a theory of personality. Individuals have their own specific needs and the strength of these characterise the personality. It is the internal needs that determine the behaviour of the individual. However, it is the external environment, the press, which affects the type of behaviour that the individual displays. Murray also distinguished two types of press: the *alpha* press, which is the environment from the perspective of an external observer, and the *beta* press which is the inhabitant's own perception or interpretation of the surroundings (Cresswell & Fisher, 1999).

Alpha press is a description of the environment as perceived by an outside observer, and "this environment is the objective, psychological environment, the contextual situation that ought to be seen by the individual" (Block, 2002, p. 46). Not all students have the same perception of this environment and so there is need for another description of the press. Beta press is a description of the environment as perceived by the inhabitants of the environment, "the subjective psychological environment" (Block, 2002, p. 46). This can vary from individual to individual and so there are many subjective environments. *Consensual* beta press is the combined perceptions of all the students to obtain an average of the environment scores (Fraser, 1991). Since this is a calculated entity, it is quite distinct from the private press as perceived by individuals and it gives an overall view of the environment.

2.2.2 Perception of Classroom Environment

These seminal ideas of Lewin and Murray have influenced the investigation of classroom environment and school environment as they are perceived by the inhabitants of these environments. There are at least three ways in which the human environment can be studied. It can be described by: first, the dimensions of the organisational structure, e.g. a school's environment could be measured in terms of size, number of staff, salaries and resources as

these will influence the behaviour of the individuals in the environment; second, the personal characteristics of the inhabitants of the environment as the character of the environment depends on the nature of its members; and third, the psychosocial and social dimensions of the environment as it is perceived by the inhabitants of the environment (Cresswell & Fisher, 1999). This last approach is the one that has been used consistently in the development of classroom environment research.

Early research involved the relationships between students and teachers and among students. Continuing research on classroom climates depended on the development of more rigorous measurement methodology (Ellett, 1986). Numerous instruments have been developed to investigate the classroom environment and these have basically followed three stages: (1) identification of salient dimensions, (2) item writing and (3) field testing and item analysis (Fraser, 1986).

The beginnings of the development of the field of learning environment have often been attributed to two American researchers, Herbert Walberg and Rudolf Moos. Walberg developed the *Learning Environment Inventory* (LEI) to assess the students' perceptions in the investigation of the Harvard Physics Project, while Moos developed questionnaires to research nine different human environments, including the classroom environment. The instrument to investigate the classroom environment is the *Classroom Environment Scale* (CES) (Fraser & Walberg, 2005).

After these first pioneering contributions around 35 years ago, research work by Wubbels and his colleagues in The Netherlands produced the next pioneering step 10 years later with the development of *Questionnaire on Teacher Interaction* (QTI). At the same time in Australia, Fraser and Rentoul developed the *Individualised Classroom Environment Questionnaire* (ICEQ) (Fraser & Rentoul, 1982) which measured teacher perceptions of classroom Personalisation, Participation, Independence, Investigation, and Differentiation.

The *What is Happening in This Classroom* (WIHIC) instrument combines modified versions of scales from a wide range of existing questionnaires into a parsimonious system which also includes new scales, Equity and Constructivism. From the original version (Fraser, McRobbie, & Fisher, 1996) various refinements have been made and now the instrument has been widely used internationally (Australia, Canada, United States of America, United

Kingdom, Singapore, Taiwan, Brunei Darussalam and Korea). The use of WIHIC in all of these situations was validated and proved to be reliable (Fraser, 2007). Dorman (2003) analysed the data from WIHIC for 3890 high school students from Australia, Britain and Canada in confirmatory factor analysis. The factor structure of WIHIC was supported and found to be invariant across country, grade level and student gender. It has proved to be a valuable and important instrument in the evaluation of the classroom environment (Fraser, 2007).

2.2.3 Dimensions of Classroom Environment

Much of the research that has followed Moos' original work is based on his contributions that showed that the same basic types of dimensions characterise many different human environments.

The *Relationship* dimension involves the strength and type of personal relationships that exist within an environment and the strength of the support that the inhabitants give to each other.

The *Personal Development* dimension assesses the general direction in which personal growth and self-enhancement tend to occur.

The *System Maintenance and Change* dimension is characterised by the extent to which the environment is structured and orderly, provides clear expectations, maintains control, and is responsive to change (Cresswell & Fisher, 1999; Fraser & Walberg, 2005; Moos, 1987).

Further development of instruments to measure the classroom learning environment has continued up to the present and it has been based on the work previously mentioned, so that now there is a substantial set of instruments from which to choose. Some of these are outlined in Table 2.1. Table 2.1 only includes instruments that are used in the investigation of classroom environments.

The perceptions of students and teachers are used to assess the learning environment of the classroom and it is likely to be described in terms of the relationships between the students and between students and the staff (Shavelson & Seidel, 2006). Research has shown that the classroom environment is very much the product of the teacher and "teachers regard classrooms as their territory over which they have ultimate control" and "it is clear from the present research that school environment does not strongly influence classroom environment" (Dorman, Fraser, & McRobbie, 1997, p. 87).

Table 2.1

Descriptive information for nine Learning Environment Questionnaires

Instrument	Level for use	Relationship dimension	Personal development dimension	System maintenance and change dimension
Learning Environment Inventory (Walberg & Anderson, 1968)	Secondary	Cohesiveness Friction Favouritism Apathy Cliqueness Satisfaction	Speed Difficulty Competitiveness	Diversity Formality Material environment Goal direction Democracy Disorganisation
Classroom Environment Scale (Moos, 1979)	Secondary	Involvement Affiliation Teacher support	Task orientation Competition	Order and organisation Rule clarity Teacher control Innovation
My Class Inventory (Fisher & Fraser, 1981)	Elementary	Cohesiveness Friction Satisfaction	Difficulty Competitiveness	
College and University Classroom Environment Inventory (Fraser & Treagust, 1986)	Higher education	Personalisation Involvement Student cohesiveness Satisfaction	Task orientation	Innovation Individualisation
Individualised Classroom Environment Questionnaire (Fraser, 1990)	Secondary	Personalisation Participation	Independence Investigation	Differentiation
Questionnaire on Teacher Interaction (Wubbels & Levy, 1993)	Primary/ secondary	Helping/friendly Understanding		Leadership Student responsibility/freedom Uncertain Strict
Science Laboratory Environment Inventory (Fraser & McRobbie, 1995)	Upper Secondary/ higher education	Student cohesiveness	Open-endedness Integration	Rule clarity Material environment
Constructivist Learning Environment Survey (Taylor et al., 1995)	Secondary	Personal relevance Uncertainty	Critical voice Shared control	Student negotiation
What Is Happening In This Classroom (Fraser et al., 1996)	Secondary	Student cohesiveness Teacher support Involvement	Investigation Task orientation Cooperation	Equity

Adapted from Fraser (Fraser, 2000, pp. 164-165).

2.2.4 School Environment

The discussion of the learning environments of schools makes a clear conceptual distinction between the classroom environment and the school environment. Each has been developed for a different purpose and is born out of different historical background. "Despite their simultaneous development and logical linkages, the fields of classroom-level and school-level environment have remained remarkably independent" (Fraser, 1995, p. 495). School environment is commonly viewed as being distinct from and more global than the classroom environment. School environment is considered to be better described by staff of the school (Docker, Fraser, & Fisher, 1989). The description of the environment is in terms of the relationships between the teachers, between teachers and other staff and between teachers and principal. Since students are unlikely to have a very good knowledge of these relationships, it is usually only the teachers who are requested to respond to a questionnaire on the school environment (Fraser, 1995).

There have been considerably fewer examples of instruments that have been used to measure school environment than there have been to assess the classroom environment and "for many years there has been an inference in educational literature that a good school environment is linked with student achievement" (Webster, 2002, p. 41). Evidence gathered by Flynn (1985) led him to suggest that the various school processes foster "the overall climate or ethos of the school which has a pervasive influence on students' achievement" (p. 356). Anderson (1982) also concluded in her review of research that school affects many student outcomes, including cognitive and affective behaviour.

According to Fraser (1995) much of the school climate research was based on the theory, instrumentation, and methodology of earlier work in business contexts. Consequently, school level environment has been associated with administration and was based on the assumption that schools can be viewed as formal organisations. Three of the different methods of conceptualising and measuring human environments have been used for school environments: dimensions of organisational structure (structural dimensions, bureaucratic dimensions, organisational dimensions); personal characteristics of inhabitants of a milieu; psychosocial characteristics and organisational climate (relationship dimensions, personal development dimensions, system maintenance and system change dimensions) (Rentoul & Fraser, 1983).

An early instrument to measure the school environment, *College Characteristics Index* (CCI) (Pace & Stern, 1958) was developed. This was developed further by Stern in 1960 (Stern, 1961) to form the *High School Characteristics Index* (HSCI) which could be used at the high school level. The HSCI measured 30 scales, seven of which accounted for 59% of the variance. These scales were: Intellectual Climate, Expressiveness, Group Life, Personal Dignity, Achievement Standards, Orderliness, and Practicalness. Other instruments, like the *Organisational Climate Description Questionnaire* (OCDQ) (Halpin & Croft, 1963), were also used. The OCDQ was used in more than 200 studies in at least eight countries and achieved something of a bandwagon status in research in the field of educational administration (Rentoul & Fraser, 1983).

The *Work Environment Scale* (WES) was developed by Moos (1979) who recognised the distinction between the classroom environment and the school environment. The *Classroom Environment Scales* (CES) measured the student perceptions of the characteristics of their classroom and the WES was used to measure the teachers' perceptions of the aspects of the school environment. The WES was designed for use in any work milieu and its 10 scales were well suited to describing features of a school's environment (Rentoul & Fraser, 1983). The three dimensions measured were employed by Moos in all his instruments and the same dimensions are measured in the classroom environment:

- Relationship dimension
- Personal Development dimension
- System Maintenance and System Change dimension.

This scale was first used in schools in 1983 by Fisher and Fraser in Tasmania (Fisher & Fraser, 1983).

The history of school level environment measurement is marked by the development of different scales and questionnaires and Fisher and Grady (1998) mention a few.

> Examples of school environment instruments include: the *College Characteristics Index* (CCI: Pace & Stern, 1958) which measures student or staff perceptions of 30 environment characteristics; the *High School Characteristics Index* (HSCI: Stern, 1970) which is an adaptation of the CCI; the widely-used *Organizational Climate Description Questionnaire* (OCDQ: Halpin & Croft, 1963); and the *Work Environment Scale* (WES: Fisher & Fraser, 1983, 1991; Moos, 1981).
> (Fisher & Grady, 1998, p. 336)

When all of these instruments were reviewed, "most of these have weakneses" (Rentoul & Fraser, 1983, p. 28) and, consequently, the development of the *School-Level Environment Questionnaire* (SLEQ) was justified and its development was meant to resolve potential problems. The development of the SLEQ satisfied the following six criteria:

1. Consistency with the literature. Many of the characteristics of school environment had already been identified in the various scales that had been used before.
2. Coverage of Moos' general categories. The three dimensions categorised by Moos for delineating all human environments were used.
3. Salience to practising teachers. Checking the questionnaire with teachers ensured the items were salient to the teachers.
4. Specific relevance to schools. Some previous scales were not designed for schools and some had been modified but others contained items that were not specifically school orientated.
5. Minimal overlap with classroom environments. Since the classroom and school environments are conceptually distinct, there should be little overlap of the two instruments.
6. Economy. An attempt was made to keep to a relatively small number of reliable scales, each containing a small number of items

(Fisher & Grady, 1998; Rentoul & Fraser, 1983).

A description of the scales of the SLEQ and their classification into Moos' categories is shown in Table 2.2. There are two scales for Relationship dimension, two scales for Personal Development dimension and four scales for System Maintenance and System Change dimension. There were seven items for each of the eight scales. A description of the scales and a sample item is given for each of the scales.

In testing for the validity of the SLEQ scales, the Cronbach alpha reliability coefficient ranged from 0.70 to 0.91 with a mean of 0.82 for the validation sample, and from 0.68 to 0.91 with a mean of 0.79 for the cross-validation sample. This indicated that the SLEQ scales showed satisfactory internal consistency for a scale composed of only seven items. Further development of the SLEQ has been carried out and it has consistently been shown to be a reliable instrument (Fisher & Fraser, 1991).

Table 2.2

Description of scales in the SLEQ and their classification according to Moos' Scheme

Scale Name	Description of scale	Sample item	Moos' general category
Affiliation	The teachers can obtain assistance, advice and encouragement	I feel that I can rely on my colleagues for assistance if I should need it	Relationship
Student Supportiveness	There is good rapport between teachers and students	There are many disruptive, difficult students in the school	Relationship
Professional Interest	Teachers discuss professional matters and show an interest in their work	Teachers frequently discuss teaching strategies and methods with each other	Personal development or goal orientation
Achievement Orientation	Teachers value and expect high student achievement	Students at this school are seldom under pressure to excel at academic work	Personal development or goal orientation
Formalisation	Teachers are expected to comply with set rules and procedures	I am often supervised to ensure that I follow directions correctly	System maintenance and system change
Centralisation	Decisions are made by an individual or a small group within the school	Teachers are frequently asked to participate in decisions concerning administrative policies and procedures	System maintenance and system change
Innovativeness	The school is in favour of planned change and experimentation	Teachers are encouraged to be innovative in this school	System maintenance and system change
Resource Adequacy	Support personnel, facilities, finance, equipment and resources are suitable and adequate	The supply of equipment and resources is inadequate	System maintenance and system change

(Rentoul & Fraser, 1983, p. 31).

Other instruments have been developed to measure school level environments in particular areas, and these have used the SLEQ and the WES as a basis for the development. The Catholic School Environment Questionnaire (Dorman, 1994) sought to define and measure dimensions that were particular to schools which provide education to a subset of students who attend a religious school. Such schools might be expected to have a particular ethos relating to their purpose as a Catholic school. New dimensions were introduced in this instrument. *Mission Consensus* was used to measure the extent to which consensus exists within staff with regard to the mission of the school. *Empowerment* measured the extent to which teachers are empowered and encouraged to be involved in decision making process.

Work Pressure measured the extent to which work pressure dominates the school environment. The *Special School Level Environment Questionnaire* (SSLEQ) was constructed for the purpose of measuring the school level environment of special schools which, by their very nature, are different from other schools and different scales needed to be used. "Of these, some are modifications of existing instruments (SLEQ, Fisher and Fraser, 1991; CSEQ, Dorman, 1996) whilst others were evolved with the special environment in mind" (Adams & Adams, 2000, p. 3). The scales of the SSLEQ were allocated to the three dimensions of Moos' WES as follows:

- Relationship dimension – Individualisation, Special Purpose, Holism
- Personal development dimension – Professional Interest
- System maintenance/system change dimension – Work Pressure, Empowerment, Resource Adequacy (Adams & Adams, 2000).

The new dimensions in this instrument are defined as follows: Special Purpose is the extent to which the school and staff define its purpose and goals in relation to its pupils with statements of special educational needs; Individualisation measures the extent to which a student is indentified and has the individuals needs met; Holism is the extent to which the school addresses holistically the needs of each child.

The SSLEQ was administered in three different types of schools which catered for students who have severe learning disorder (SLD), have moderate learning disorder (MLD), or are mainstream students. Analysis of the findings of this study showed that the means and standard deviations of different types of schools were all high and where there were significant differences they were more commonly between the special sector and mainstream settings. One surprising result was the dimension of Holism, with the highest perception rating coming from the mainstream setting. This seems to indicate that special classrooms are not necessary for the holistic addressing of the needs of children and the mainstream classes can perform the same function as well as special schools. Also, the scale of Individualisation was seen as a preoccupation of special educators (Adams & Adams, 2000). How this instrument would apply to a mainstream school that has a large number of special students has not yet been tested.

The schools that exist in this country are often different due to the underlying philosophical reasons for their foundation. Government schools are to serve the whole community and are established by the government, while church and private schools are meant to offer education

to those who choose something that is more in line with their beliefs. Although this was the original intent of the founders of the schools, it is has become apparent that these are not the only reasons that schools are chosen by parents for their children (The Congregation for Catholic Education, 2002).

2.3 THE CATHOLIC SCHOOL

It is not the intention of this review to examine the long history of the Catholic Church and its involvement in education but it is important to enunciate some of the principles that are behind this involvement. An understanding of the human environment dimensions of a Catholic school is enhanced by this knowledge of the stated aims and objectives.

2.3.1 The Mission of the Catholic School

The Catholic Church has produced many documents that have clearly stated the role of education in the life of the Church and the individual. The Vatican Council produced a declaration on education "Gravissimum Educationis" (Vatican II, 1965) that emphasises the rights of children, in particular, to receive an education "with the aid of the latest advances in psychology and the arts and science of teaching, to develop harmoniously their physical, moral and intellectual endowments so that they may gradually acquire a mature sense of responsibility in striving endlessly to form their own lives properly and in pursuing true freedom as they surmount the vicissitudes of life with courage and constancy" (p. 6).

Due to "the mandate she has received from her divine founder of proclaiming the mystery of salvation to all men" (Vatican II, 1965, p. 6) the Church has a much stronger emphasis on the religious education of all people, not merely striving for the maturing of a human person but for the spiritual growth and understanding of faith in God and for the person's development into "perfect manhood, to the measure of the fullness of Christ" (Vatican II, 1965, p. 7). As this is the ideal of the Church's mission in education, it exhorts its pastors to fulfil their obligations "to see to it that all the faithful, but especially the youth who are the hope of the Church, enjoy this Christian education"(Vatican II, 1965, p. 7). Thus, Catholic education is based on the belief that to be human is to be religious and that the fully human person is one in whom the religious dimension has been developed along with other elements of the development of the whole person (Flynn, 1985). The integral formation of the human person

includes the development of all the human faculties of the students, preparation for professional life, formation of social and ethical awareness, growing awareness of the transcendental and religious education (The Sacred Congregation for Catholic Education, 1983). Catholic schools give a unique meaning to this development of the whole person by integrating a specific religious tradition within the education they provide.

It is in schools that the Church tries to accomplish its mission of education of youth. The task of the Catholic school "is fundamentally a synthesis of culture and faith, and a synthesis of faith and life: the first is reached by integrating all the different aspects of human knowledge through the subjects taught, in the light of the Gospel; the second in the growth of the virtues characteristic of the Christian" (Vatican II, 1965, p. 28). It is in this religious dimension that the school climate is expressed in religious celebration of Word and Sacrament, "in individual behaviour, in friendly and harmonious interpersonal relationships, and in a ready availability" (The Congregation for Catholic Education, 1988, p. 25). It is not the school on its own that has the duty of fulfilling the mission of the school. "Achieving the educational aims of the school should be an equal priority for teachers, students and families alike, each one according to his or her own role, always in the Gospel spirit of freedom and love" (The Congregation for Catholic Education, 1988, p. 32).

2.3.2 Resources

The Church has always maintained that the parents have always had the original, primary and inalienable right to educate their offspring in conformity with the family's moral and religious convictions. The parents are considered to be primarily and principally responsible for the education of their children and they require the support of society as a whole to carry out this duty. Civil society should be able to promote the education of children in various ways and, at the same time, give due consideration to the wishes of the parents, including their religious aspirations (Vatican II, 1965). The Congregation for Catholic Education advances the idea that the school should be an extension of the home and have some of the amenities "which can create a pleasant and happy family atmosphere" (1988, p. 25). Adequate physical facilities should be provided including sufficient space for classrooms, sport and recreation, staffrooms, rooms for parent-teacher meetings and group work. While not every school is able to provide the same standard of physical amenities, students can be made to feel 'at home' if the climate is human and spiritually rich (The Congregation for Catholic Education, 1988).

The Congregation points out that the school should be an example of simplicity and evangelical poverty but it must have the materials needed to educate properly for the modern world, even though this might be expensive. The need for the appropriate equipment required in the different subject areas has to be met. This might require support from other bodies and governments to allow schools to be equipped with the necessary materials to carry out their duties successfully.

The total education of the human person is stressed by The Sacred Congregation for Catholic Education (1977) and individual subjects are taught so that students might assimilate skills, knowledge, methods, and moral and social attitudes which help develop their personalities and make them active members of their society. The intellectual, social, cultural, and physical aspects of human nature are important for the full development of the individual, as is the "acquisition of values and the discovery of truth" (p.34). The Catholic school is also encouraged to take advantage of other sources of education outside the school that provide sources of information and teach the students to make critical and personal analysis of what is offered and integrate it into their Christian human culture. "The development of religious faith in a Catholic school takes place in the context of the growth of the whole person and will be influenced by the processes and quality of the schooling which students experience" (Flynn, 1985, p. 4).

2.3.3 Community Relationships in a Catholic School

Within the document "Lay Catholics in Schools" there is a great importance placed on the communication between the teachers and the students and urges the teacher to use a pedagogy "which gives special emphasis to direct and personal contact with the students"(The Sacred Congregation for Catholic Education, 1983, p. 26). This contact should lead to an openness and dialogue which will lead to a better understanding. This communication is not limited to students and teachers. Parents, administrators and non-teaching staff are also included and together they make up the educational community. "It requires a common effort from all our families, parishes and agencies" (Bishops of New South Wales and the Australian Capital Territory, 2007, p. 20). Belonging to this community should give a sense of what it means to be Church and each one should be treated as a fully equal member of that community.

Part of the equality in the community is in the decision making process. “Laity should participate authentically in the responsibility for the school; this assumes that they have the ability that is needed in all areas, and are sincerely committed to the educational objectives which characterise a Catholic school” (The Sacred Congregation for Catholic Education, 1983, p. 81). A Catholic view of society has subsidiarity as one of its cornerstones: “while all structures must be judged according to the common good…the preferable arena of decision making and action is local. Human dignity is served better by families, neighbourhoods and local communities than by large, impersonal, bureaucratic structures” (Cavanagh, 2009; O'Keefe, 1999, p. 28). This is not advocating a school should be a democracy with all the decisions made collaboratively; rather that decisions which can be made by local authority should be made by that authority, not in the far reaches of bureaucracy. “In consequence of the principle of participation and co-responsibility, the various groupings which constitute the educational community are, according to their several competencies, to be associated in decision-making concerning the Catholic school and in the application of decisions once taken” (The Sacred Congregation for Catholic Education, 1977, p. 54). In other words, administration teams in schools should seek to involve teachers and others in the decision making process and this should be in a relational manner in any school that is committed to the Gospel-centred view of the world (Dorman, 1994).

The relational climate of a Catholic school is described by The Sacred Congregation of Catholic Education (1988):

> That everyone agree with the educational goals and cooperate in achieving them; that interpersonal relationships be based on love and Christian freedom; that each individual, in daily life, be a witness to gospel values; that every student be challenged to strive for the highest possible level of formation, both human and Christian. (The Congregation for Catholic Education, 1988, p. 84).

The challenge is for the whole school community to make this ideal a reality.

2.3.4 Role of Staff in a Catholic School

The administrators, teachers and support staff, have the most influence in the school climate due to their numbers and full-time presence each working day. “It is the lay teachers, and indeed all lay persons, believers or not, who will substantially determine whether or not a school realizes its aims and accomplishes its objectives” (The Sacred Congregation for

Catholic Education, 1983, p. 7). The Sacred Congregation is at pains to clarify the use of the word 'teacher' which is meant to include "those who are responsible for the direction of he school, or are counsellors, tutors or co-ordinators; also those who complement and complete the educational activities of the teacher or help in administrative or auxiliary positions" (p.20). Further discussion of 'teacher' shows that the person considered as a teacher is more than someone who transmits a body of knowledge in the context of school and should be understood as 'educator' – one who helps to form human persons. Since this goes well beyond the transmission of knowledge, adequate professional formation and continued development is required for the educational profession.

In keeping with this ideal of the Catholic educator, The Sacred Congregation of Catholic Education (1983) points out that part of the mission of the school should be to assist the teachers to find adequate, ongoing, formation and even for it to provide suitable conferences or seminars necessary for the indispensible formation. However, it is stressed that the teachers are responsible for actually taking part in professional development. Brisbane Catholic Education (2005) takes up this theme: "While maintenance (of professional development) is the responsibility of the individual teacher, schools will provide opportunities to assist teachers to meet the maintenance requirements" (p. 3). Further, the schools will normally provide fulltime teachers with professional development days and part-time and relief-staff are encouraged to consult with school administration to find appropriate times for them. The Queensland State Government enacted the Education (Queensland College of Teachers) Act, 2005, which brought into being the Queensland College of Teachers in the State. This College has been developing policy and practices since then and now has started promulgating its regulations on *continuing professional development* (CPD). While it stresses the importance and necessity of CPD, the main thrust is towards knowledge and teaching, with little emphasis on educating (Queensland College of Teachers, 2009).

2.3.5 Education for All in a Catholic School

All people are entitled to education and this has been alluded to already in previous paragraphs, and it especially refers to children in order that they may develop their full potential as human beings. "In its ecclesial dimension another characteristic of the Catholic school has its root: it is a school for all, with special attention to those who are weakest" (The Congregation for Catholic Education, 2002, p. 201). These least advantaged groups, whether

it be through physical, intellectual, social or financial disadvantage, are very much part of the mission of the Catholic school. “Catholic schools are committed in a special way to the development of the whole person since they endeavour to provide an education which contributes to the physical, intellectual, social, emotional, aesthetic, vocational, moral and religious development of their students” (Flynn, 1985, p. 15). The Catholic school is not meant to be the sole contributor to these developmental aims and the family, church, society and other relevant professionals also have their responsibilities but “the school must begin from the principle that its educational programme is intentionally directed to the growth of the whole person” (The Sacred Congregation for Catholic Education, 1977, p. 27). The Catholic Education Council of the Archdiocese of Brisbane is at pains to point out that it is a matter of human rights to ensure that reasonable adjustments are made to ensure the provision of access, participation and achievement for all students (Archdiocese of Brisbane Catholic Education Council, 2007).

The Archdiocese of Brisbane has nine priorities in its Strategic Renewal Framework 2007-2011 for Catholic schooling. Two of these priorities include: in Priority 2, “We intend to: develop inclusive, comprehensive and quality curriculum, assessment and reporting” (p. 20) and further in Priority 3 “We intend to: strengthen our capacity to provide for the diverse needs of students with disabilities” (Brisbane Catholic Education, 2007b, p. 21). This is further translated into policy by the Catholic Education Council of The Archdiocese of Brisbane (2007):

> We are committed to quality inclusive schooling, empowering learners of all ages especially those who, because of a disability require significant adjustments to access the curriculum. We trust our shared community of learning will shape and enrich our changing world, by living the Gospel of Jesus Christ. (Catholic Education Council, 2007, p. 1)

There should be no distinction made between children with, and those without, special needs for their education. All children should receive the education that is fitting to their needs. The best way for this to be carried out is for the school community to decide. The Archbishop of Brisbane, John Bathersby states: “The responsibility for implementing this policy will reside with Catholic schools and their dedicated staff who share in the overall mission of the Archdiocese” (Archdiocese of Brisbane Catholic Education Council, 2007, p. 1).

The social climate and ethos of a school mediates the school's influence in the all-round development of its students and "various research studies have found the milieu or environment of a Catholic school to be a strong formative influence" (Flynn, 1985, p. 22). Further research by Dorman, McRobbie and Foster (2002) related classroom environment with positive Christianity scales and found also that high levels of cooperation in the religious education classroom was strongly related to the development of a positive attitude to social justice. The Catholic school in Australia is also accountable to the government for the way in which it carries out its role in educating children. It is, to some extent, under the control of the government education authorities and it must follow the rules and curriculum guidelines if it is to maintain its standing in the educational community and attract students to its enrolment. However, the Catholic school should not accept all new educational projects unquestioningly but show that it is in the forefront of the ecclesial community's concern for education.

> In this way the Catholic school's public role is clearly perceived. It has not come into being as a private initiative, but as an expression of the reality of the Church, having by its very nature a public character. It fulfils a service of public usefulness and, although clearly and decidedly configured in the perspective of the Catholic faith, is not reserved to Catholics only, but is open to all those who appreciate and share its qualified educational project. (The Congregation for Catholic Education, 2002, p. 202).

While the Congregation for Catholic Education is mindful of the ideals of Catholic schools, it is also very aware that not all who attend these schools live up to these ideals. Catholic schools are engaged in a value-orientated education, aimed at life-long learning which recognises the place of Christian faith and the Gospel of Jesus in the lives of people (Flynn, 1985). However The Congregation of Catholic Education (2002) states there are some students and families who are indifferent to the mission of the school and are interested only in academic results as the best outcome.

> In an increasing number of instances they are not only indifferent and non-practising, but also totally lacking in religious or moral formation. To this we must add – on the part of numerous pupils and families – a profound apathy where ethical and religious formation is concerned, to the extent that what is in fact required of the Catholic school is a certificate of studies or, at the most, quality instruction and training for employment. (The Congregation for Catholic Education, 2002, p. 196)

When instances of lack of participation in the mission of the school occurs, the teachers then find it hard to reconcile their educative and teaching roles, which can detract from the whole school environment.

2.4 INFLUENCES IN SCHOOLS

Schools, in general, have many factors in common and it is necessary to examine some of these to see the influence they have on a school environment.

2.4.1 Government Influence on the Education of Children with Special Needs

The teaching of special needs children has been of interest for many years, with parents, governments, education departments, schools and teachers having an input into the ways in which it should be carried out (Deppeler & Harvey, 2004). As a result of the differences in the educational needs of these children, there is no clear conclusion as to which is the best way, or the correct way, for this type of education to be practised, although it appears more certain that inclusion of special needs students into the general classroom is the more acceptable process (Waite et al., 2005). A brief look at the history of inclusion shows some of the difficulties faced by proponents of special education.

In early colonial Australia, people with disability or impairment were housed in insane asylums, hospitals and depots for invalids. They were collected here for convenience, with little or no concern for treatment or cure, regardless of the type of disability. This continued until some institutions began to appear that catered for people with intellectual disability in the early nineteenth century (Ashman & Elkins, 2002).

Since compulsory education did not come into existence until the turn of the 20th century, little was done for those with disabilities, although some schools for children with sensory impairments were opened at this time. Special schools became the State responsibilities and these catered for most children with special needs. Children with disabilities were being taught in schools in Australia for quite a number of decades but it wasn't until landmark decisions were made in other countries that Australia really made a concerted effort to cater for these special cases (Ashman & Elkins, 2002).

Prior to 1975, in the United States of America, it had been a common procedure for students to be excluded from public schools if they were not able to benefit from the usual educational process. Students were not allowed to remain at school if they had not reached the mental age of a five year old and then the Department of Public Welfare would arrange for the care, training and supervision of the child (Rudd, 2002). A landmark court case was held in Pennsylvania in 1972 and it changed the outlook for children with disabilities from that time. The Education for All Handicapped Children Act of 1975 (also known as Public Law 94-142) abolished the legal exclusion of this minority group from public schools (Rudd, 2002) and integration became the new method for educating the children with special needs.

2.4.2 Families

A family has a big influence on the educational aspirations of its members and the most important influence here is that of the parents. "The knowledge gained by the child during these early years is dependent to a large degree on the organisation of the family and the dynamics that occur within it. This in turn, becomes the foundation on which teaching and learning is based during the decade -or more- of formal schooling" (Ashman, 2002, p. 10).

In a study conducted by Johnson and Duffet (2002), the academic aspect of mainstreaming special needs students received a positive response from parents and a majority (56%) of these parents thought their children performed better in mainstreaming while only 21% thought it was detrimental to the children. Raising academic standards of the special needs students was not on the top of the priority list for most parents. Another positive for mainstreaming was the fact that the parents thought there was less stigma attached to their children than there used to be in special education and they felt there was little resentment from the parents of the children who do not have special needs (Johnson & Duffet, 2002).

While academic achievement of special needs students was not the main objective of their parents, it certainly has a place to play in the schooling of the students. Parents would like to see their children achieve some goals, knowing that these would not be of the same standard as those of the other students. One set of results indicates that there are differing views about what the parents expect of the children. The parents were asked:
If your state required high school students to pass an exit exam covering basic skills and knowledge to get a high school diploma, would you want your child to:

Be required to pass the same test.	34%	Affirmative
Pass the same test but with special accommodations.	50%	Affirmative
Be excused from the test.	4%	Affirmative
Take a different, easier test.	11%	Affirmative

(Johnson & Duffet, 2002, p. 21)

These results indicate that parents often have differing views of what is important for the education of their children. Schools have to take into account the concerns and expectations of parents if they are to be realistic in meeting the needs of the special students (Australian Association of Special Education Inc., 2004). The positive effect of parental involvement in the children's education is well documented, although there is little proof of a direct, causal link of the two. Parents should be encouraged to become involved in the educational process for all the children, not only the special needs children as there seems to be an advantage to the students in more ways than just the academic achievement. Attendance, behaviour and self-esteem all seem to improve with increased parental involvement in schools (Ysseldyke, Algozzine, & Thurlow, 2000).

2.4.3 Students and Their Self-efficacy

Although the effects of the family on all children are important, the children with special needs seem to have been neglected when it comes to investigation of how their education affects them. The circumstances in which children are educated would have some bearing on how the children view their education. How students are represented in the category of those with special needs has been a topic of discussion and research for a number of reasons: some students may not receive support, or receive support that is inappropriate for their needs; students may be incorrectly labelled; placement in special education may be a form of discrimination (Dempsey, 2003).

The ascertainment of students in Queensland by the Education Department and the Catholic Education Office would seem to be thorough enough to eliminate wrong labels being applied to students. Students should all be in the appropriate setting to receive the necessary help in their education. There may be some students who do not go through the process as their parents are reluctant to have them ascertained and these children may miss out on what they need in their education.

It is recognised that there are usually more boys than girls in the group of children with disabilities (Dempsey, 2003). Various reasons have been hypothesised to explain this: there are a range of biological explanations including the fact that males mature later than females; boys are more physically active than the girls and are more likely to be judged to have behaviour difficulties; and bias may occur during referral due to the different expectations of the boys and girls. According to Dempsey (2003), biological reasons for this disproportionality appear to be the most convincing, in comparison to differences in students' behaviour or to bias.

The figures for special education in Australia show a similar disproportion of males to females. "However, the extent of knowledge and debate about gender disproportionality in special education in Australia is very limited" (Dempsey, 2003, p. 18). It may be faulty logic to expect that there be equal numbers of boys and girls receiving help in their education due to equity issues. The present understanding of the reasons for the present representation is not clearly understood and this remains something to be considered in the future (Dempsey, 2003). What effect this has on the effectiveness of inclusive education is also something that needs further consideration.

The effectiveness of including children with disabilities in regular mainstream classes is an ongoing issue that is being canvassed in many circles. Parents, teachers and principals agree that the educational needs of children with disabilities can be met in the regular classroom (Dancy, 2005). However, research (Jerwood, 2002) has found that the results are not all positive. The research found that although some teachers think it is the right of all pupils to attend a mainstream school, in reality they do not think all pupils can cope with mainstream classes. Also teachers were finding it difficult to manage pupils who had behavioural difficulties. Further investigation (Symonds, 2003) has shown this is not an isolated case.

A further difficulty that can be encountered in the inclusive classroom is the one where the treatment of all students is the same. That is, all the students have the same needs and abilities as each other. To go from one extreme of exclusion to the other of not recognising differences, is manifestly unjust. This is not a very common problem. A child, who is assessed as having a disability at the highest level, can be recognised by this label as her

identity, for example, a Level 6. This identity serves to accentuate the differences from the peers rather than recognising the similarities with them (Gale, 2001).

Further evidence gained in the research by Gale (2001) indicates that giving a person equal opportunity to learn besides their peers does not automatically deliver equality in learning. The differences among the students have to be taken into account and provision has to be made for these differences if inclusion is to be effective. The student identity has to be developed by the student and parents. This allows for a different valued place in the classroom where the student can further develop abilities and use what they already know and do (Gale, 2001).

This identity factor influencing the effectiveness of educating children is the ideal of their own self-efficacy. There is some research pointing out the importance of this concept of self-efficacy but little of the work seems to have been applied to children with special needs (Lancaster, 2005).

Self-efficacy is described as a person's belief about one's capability of performing in certain situations. This belief contributes significantly to the level and quality of the person's functioning as it has an influence on the thoughts, feelings, motivation and behaviour. The way in which children learn is dependent on their own concept of what they believe they are able to learn and how they can learn it (Friedel et al., 2007). When students feel confident of success at a task they are likely to participate in the task. If the students doubt they can succeed at a task then they are less likely to choose to engage in it or put a lot of effort into it, especially if they encounter difficulty with it or obtain negative feedback (Urdan & Schoenfelder, 2006). Children with special needs have difficulty verbalising their concepts and this may be one of the reasons why researchers have neglected this group of children. Students acquire information about their self-efficacy from factors they use in their tasks: performance accomplishments, persistence, abilities and prior history in the type of task. These factors are then used to change the concept of self-efficacy. Success would usually mean an improving self-efficacy and this in turn would lead to more success, particularly in mathematics, reading and writing. Habitual skills that are well established are not influenced by self-efficacy beliefs but new learning is dependent on the learner's beliefs (Lancaster, 2005).

The Adelaide Declaration on National Goals for Schooling has one goal high on the list:

> In particular when students leave school they should:
> … have qualities of self-confidence, optimism, high self-esteem, and a commitment to personal excellence as a basis for their potential life roles as family, community and workforce members. (Ministerial Council on Education, 1999, National Goals 1.2)

This shows that the high self-esteem and self-confidence of students are considered to be important enough to be goals that schools should strive to achieve for their students. These goals are not as simple as these words make them appear to be. Research on self-efficacy suggests it is not a single construct but a multidimensional one and individuals may have a high opinion of their abilities in one area (e.g. physical abilities) and a low opinion in another area (e.g. academic). The global self-esteem is an addition of self-esteem in all the areas, plus the individual's concept of the importance of each area. A person may have a low self-esteem of self in the academic area and also regard this as being unimportant, so the global opinion of self is not diminished by this (Humphrey, 2004).

The impact of self-esteem on academic performance has not been shown to be of great importance and it may be that self-esteem is a consequence of academic achievement rather than a cause. However, when there is a specific study of academic domain of self there seems to be a much stronger correlation between self-esteem and achievement (Fraser & Goh, 2003). This result should be expected since the academic ability is what directly determines the achievement and self-esteem can be seen as mediating between ability and achievement. This could be an explanation of why some children do not achieve what is expected of them, based on their ability. For children with special needs who know they have little academic ability, the self-esteem may be based on giving this ability a low importance in the global self-esteem. Thus there is no threat to the individual's self-esteem and it may be compensated for with other areas that have higher importance, such as social competence (Humphrey, 2004). This area could be a rewarding and interesting one for further research.

When children with learning disabilities begin school, they usually do not understand their disability and they are assessed as a certain level of disability by the school authorities. Sometimes, it is this identity, assigned by the school, that accentuates the differences, and the similarities to other students disappear (Gale, 2001). The way in which the school and teachers handle this assessment can threaten a person's self-worth "by concentrating on her

learning disabilities and displacing the view of her own identity formed within the family unit" (Gale, 2001, p. 265). The schools have an important role in helping the growth of self-efficacy in their students (Australian Association of Special Education Inc., 2004).

The development of the self-esteem in an individual is influenced by the involvement of significant others in the life of the person. Not surprisingly, the parents seem to have a key role in this development as a result of the acceptance, approval and affection shown to the child. Teachers also have a key influence in this area as they are perceived as experts and are the ones who provide feedback on the academic achievement of the student (Humphrey, 2004).

2.4.4 Teachers and Their Professional Development

Teachers have direct influence on their students (Friedel et al., 2007). However, the teachers are formed by their own professional development and background (Rowan, Raudenbush, & Kang, 1991). They are often encouraged by the school authorities to use a certain teaching methodology and to make certain choices in the curriculum but this may not be easy for teachers (Scott & Hannafin, 2000). Education Departments issue instructions about what and when topics should be taught. As a result, teachers bring many differing and sometimes conflicting issues with them into the classroom (Rees, 1973).

For inclusion to work, teachers have to decide to make it work. This decision is not necessarily made in the first couple of days of teaching children with special needs and some teaches may take a term or two to make this decision. The decision is often prompted by some incident, or is associated with an experience that happens sometime in the teacher's work (Chalmers, 1998, p. 168).

Inclusive classrooms tend to require teachers to make some adjustments to their teaching strategies throughout the school year. This usually leads to some anxiety at the beginning of a teacher's experience with the inclusive classroom but once the teacher realises that the changes are not too invasive then the teacher "becomes progressively more positive and relaxed about the task" (Chalmers, 1998, p. 275). This research seems to indicate that the more experienced the teacher is with inclusive classrooms then the teacher is more accepting of the process and more willing to make the necessary changes in the classroom. Leong

(2003) found that teachers with 11 to 21 years experience were the most positive especially in terms of teacher efficacy and classroom adaptations for inclusive teaching.

In research done in four high schools, Idol (2006) indicated teachers had attitudes that tended to range from being willing to be involved in inclusion to being very much in favour of educating children with disabilities in the general classroom. This research considered the responses of 166 teachers from these schools. They had positive attitudes about the collaboration between colleagues and thought that this collaboration was necessary. As well as collaboration, the main type of support for teachers for inclusion in the mainstream classes should be a special educator (a teacher or a teacher assistant). The responses to the issue of the most effective way of teaching the students were compelling. In every school, nearly all secondary educators (77% across schools) thought that the best choice was to include students with disabilities with general education students and to have all available adults work with any student needing assistance. This was similar to the previous program evaluation of elementary schools, where 80% of the educators chose this option (Idol, 2006).

Not all research has been totally positive for inclusion and in one case study by Jerwood (2002), it became apparent that inclusion has had a significant impact upon teachers at the school and this impact had not been altogether positive. This study was conducted in one school only and the implications of the results are hard to estimate.

Teachers of special needs students also find themselves in need of special help. Among teachers of special needs students there are requirements for: teaching experience; professional development in special education; support from other professionals to help them with the problems they faced as teachers in the inclusive school; resources to help with the task; good management and a good leader to help with the aims and objectives of educating children with special needs (Olivier & Williams, 2005). Furthermore, qualified teachers are necessary for the implementation of a good inclusion policy in a school. “A highly trained teaching force is essential if students with special education needs are to access quality educational programs” (Australian Association of Special Education Inc., 2004, p. 6). There does not appear to be any special qualifications required of teachers in many countries, including Australia, to teach children with disabilities in the inclusive classroom. The teachers lack knowledge of individual differences and do not have the skills to adapt the curricula, the teaching and the assessment for these particular students (van Kraayenoord, Elkins, Palmer, &

Rickards, 2005). Indeed, "initial teacher training has not enabled them to manage either the types of pupils, their needs or conditions" (Jerwood, 2002, p. 126).

The attitude, training and experience of the teachers are key factors in determining the success of inclusion. Not only are the teachers working with children of different abilities and disabilities but they also have to manage additional adults in the classroom. The teachers' positive beliefs in inclusion are crucial for a successful outcome in the education of all the pupils at the school (Jerwood, 2002).

In a case study by York-Barr and Kronberg (2002), there were some problems faced by the teachers that concerned the way inclusion was carried out. The students were included in the general classroom and then the special teachers, who were normally teaching them, were allocated to follow the students from class to class. Special needs educators found that they had to be involved in many different classes and with many different teachers. As a result, they felt that they were spread too far to be of a great deal of use to the students they were trying to help. The general teachers felt that they had to communicate with too many special educators who were often unavailable as they were spread throughout the building. This was not the most satisfactory way of distributing staff.

The research by Idol (2006) mentioned previously produced qualitative data from four secondary schools and 166 teachers. The data were clear in the distinctions between academic learning problems and behaviour problems. The academic problems appeared to be more acceptable and manageable. Many of the teachers also responded with the common theme that more personnel were required for effective inclusion. From this same research project educators proposed a number of recommendations:

- Teachers should be supported to make more appropriate instructional and curricular modifications.
- Classroom teachers in inclusive classrooms should be helped in a variety of ways, including the use of consulting teaching, instructional assistants, cooperative teaching, and teacher assistance teams.
- More professional development should be provided for instructional assistants.
- Visits to schools where inclusion is practiced could be encouraged.
- The same sound disciplinary practices should be used regardless of whether the student is a student with disabilities or a student who is at risk for school failure.
- Cooperative, heterogeneous learning groups should be used.
- Reading tutor programs could be used (Idol, 2006).

There is good support from parents, teachers and principals for the inclusion of children with special needs into the general classroom (Dancy, 2005). These groups also think there is some benefit in the collaboration between special education teachers and regular classroom teachers. There was a general view among the educators that inclusion should be pursued as it seemed to be an effective teaching method for students with disabilities. “A striking exception to this was the many times they mentioned that everything changed when a student had serious behavior *(sic)* problems and was disruptive to the class. They had this reaction whether the student had disabilities or not” (Idol, 2006, p. 92). The problem caused by disruption of classes by students with behaviour problems is one that carries considerable importance and there needs to be some solution for effective inclusion of students with these disabilities into the mainstream classes.

The professional development of teachers and assistants is a necessary part of the inclusive process and most teachers agreed in the research (Idol, 2006) that professional development is important there should be more of it. The ways in which teachers are supported in the inclusive classroom need to be part of the professional development program “including consulting teaching, cooperative teaching, instructional assistants, and teacher assistance teams” (Idol, 2006, p. 93). While this is not meant to be an exhaustive list of structures or professional development, it does indicate that there is a need for more of this development for those involved with inclusive education.

Not only is there the necessity for the developmental approach to teaching practices but there exists a need for some insight into how the curriculum should be taught or adapted to the children with special needs (Maes, Vandenberghe, & Ghesquiere, 1999). The adaptation of the curriculum for the inclusive classroom depends on the type of teacher and their confidence to make changes. “The amount of change to the curriculum is usually minimal for teachers new to the inclusive classroom but changes are made at a more fundamental level when the teacher has more experience and when more support and resources are provided” (Chalmers, 1998, p. 272).

The actual academic curriculum is not always high on the list of aims set by teachers for their students involved in inclusive programs. Research involving 358 part-time students involved in inclusive programs across Australia found that, from a total of 713 replies from teachers, 46% had the social skills area identified as most significant, 27.1% had behavioural skills as

next and then academic aims followed with 26.4% (Wilmshurst, 2002, p. 137). These results seem to support the idea that as long as the students have sufficient social skills they are accepted in the mainstream classes and that academic performance is not of great consequence.

From this same research of Wilmshurst (2002), it was found that 78.8% of the students participating in part-time inclusion were involved essentially with non-academic subjects which included such subjects as Art, Woodwork, Technical Drawing, Typing and Drama. The range and subject type of these non-academic areas is quite large and can be seen to comprise three main areas: recreation and leisure, daily living skills and vocational skills activities. This choice of subjects for the young adults develops a range of skills that can then be used in post-school selection and placement (Wilmshurst, 2002).

2.4.5 Student–Teacher Relationships

Students develop, and often maintain, lasting relationships while at school. The relationships can help the students through the sometimes rough passages of life and help them grow with normal adjustment to society (Murray & Greenberg, 2001). There has been some study of these relationships through developmental psychology but "despite growing awareness of the importance of social and relational experiences, relatively few investigations have focussed on school-age children with disabilities and the quality of their social relationships with teachers and school bonds" (Murray & Greenberg, 2001, p. 25). The children with disabilities are often the ones who have difficulty with social, emotional and academic performance.

There is some evidence to support the idea that good relationships with teachers "enhance social behaviours and engagement in school" (Murray & Greenberg, 2001, p. 27) and children feel safer and more connected to the school. These relationships are positively associated with social and emotional health of the children (Australian Association of Special Education Inc., 2004). However, there is a need for more research to examine these variables among students with disabilities. Researchers have reported varying levels of social support and school bonding among these students. "In addition, little is known about the association between student-teacher relations, school bonds and indicators of adjustment among students with disabilities although findings from investigations of nondisabled children suggest that these variables are related" (Murray & Greenberg, 2001, p. 27).

Research by Murray and Greenberg (2001) has found that social support from teachers for children with educational difficulties may provide these children with a much needed resource in the school environment. The opposite also appears to be true. Children with disabilities who feel they do not have the connection with their teachers feel angrier and more upset with their teachers than do the students without disabilities.

2.5 INCLUSIVE EDUCATION

Inclusion seems to have had its origins in the efforts that began in 1973 to integrate special needs children with severe disabilities into the general education. The argument for the integration of these children was a civil rights one which held that the children should not be segregated for their education but should be allowed to associate with the non-disabled peers and form friendships and interactive relationships. This argument was not readily accepted by the school communities in general and the parents and civil rights supporters had to take legal action to force the schools to comply with the legislation and implement the provisions of *Individuals with Disabilities Education Act* (IDEA). After nearly two centuries of struggle to remove the legal exclusion of other minority groups, which included religious, racial and the poor groups, had been successful, the exclusion of students with disabilities from general schools was ended as well (Lipsky & Gartner, 1999; Rudd, 2002).

However, the integration of all children into the same mainstream schools was not the solution for the education of the children. The justice issue of exclusion had been adequately resolved but there was still considerable disquiet about the educational value of integration. "Integration was no longer being viewed as merely placing students in mainstream classrooms and by this physical placement alone, hoping some educational value would be achieved by unknown, osmotic processes" (Wilmshurst, 2002, p. 10). More thought had to be given to this process and the term *mainstreaming* evolved as a more complex term that replaced integration.

Mainstreaming also came with the concept of the least restrictive alternative placement for the children and thus the legal codification of these terms made it possible to closely supervise the requirements of federal and state governments for education (Wilmshurst, 2002). Educational policy now included increased support and the legal requirement for its implementation.

Research (Sailor, 2002) supported the push for inclusion and the question changed from "Should we do it?" to "How do we do it?" Sailor argues that there is a new phase in the progress of inclusion and this has come down to the local area and school. The intent of Individuals with Disabilities Education Act (IDEA) seems to refer to special needs children with individualised education programs (IEP) and if there are "incidental benefits" that flow on to general education students, so much the better. There is also an "emergence of a collaborative partnership arrangements of the school, the community, and the family" (Sailor, 2002, p. 8). "Many countries have active policies to include more and more children in regular schools rather than in segregated placement" (Centre for Educational Research and Innovation, 2004, p. 11)

Britain had been pursuing the process of inclusion for some time and in 1988, with the Education Reform Act, it recognised the entitlement for special needs children to participate fully in the ordinary curriculum of the school. "It was not however until the Green Paper, 'Excellence for All Children' (DfEE, 1997) that the term inclusion became more widely used and a chapter was dedicated exclusively to 'Increasing Inclusion' (Chapter 4)" (Jerwood, 2002, p. 11).

Special education and inclusion have had a number of terms associated with them in more recent years and these terms have taken on their own distinct meanings even though there is still some ambiguity about when and where these terms were first used (Sailor, 2002).
Mainstreaming: This is the oldest of the three terms and is used to refer to the time that a student with mild to severe handicaps is included in the regular classroom and is pulled out for special tuition in some areas.
Integration: The main thrust of integration is to educate the special needs children in close proximity to their general educational peers with opportunities to interact with them and share experiences. There was no policy of sharing classes or lessons in the idea of integration and the desired outcomes were time with peers at lunch, recess, and special occasions.
Inclusion: This refers specifically to placing students with disabilities of all ranges and types into general education classes where support and services are provided for that context.

The broad focus of inclusive education has shifted away from special education and is now a whole school concern. The ideal seems to be to apply the special education resources in such

a way that the whole school benefits from these resources, so that the improved quality of education is available to all students (Sailor, 2002). As inclusive education is more the accepted practice in education systems, what is important for children in this present age is not whether they have needs but rather a matter of the severity and multiplicity of those needs. The notion that some children are more deserving than others of the public funded services is "simultaneously a morally bankrupt and a technically impossible undertaking" (Gerry, 2002, p. 70) to apply to the children who may be in need of such services. As all children are deserving of an education then they should have the similar opportunities in the same schools as the other students. These types of schools are inclusive schools.

The definition of an inclusive school is not a tight and rigorous one but the meaning is quite clear.

> An inclusive school is a place where everyone belongs, is accepted, supports, and is supported by his or her peers and other members of the school community in the course of having his or her educational needs met. (Stainback & Stainback, 1990, p. 3)

However, the idea that inclusive education is for all students is not universally accepted and not all professional people have the same opinion that children with disabilities should be included in the general classroom. There is the suggestion that some children do require special education in their own setting for a number of reasons: they have behaviour problems; they require different educational technology; the teachers require different skills; and other reasons. The debate is clouded by discrepancies in the understanding of the terms used to describe inclusive education. Also, the type and severity of the disabilities of the children concerned is not always taken into account and some have a tendency to put the mildly and the severely disabled into the same category (Ysseldyke et al., 2000). As the discussion on inclusion continues, other terms such as "integration" have begun to be recognised as significant.

2.5.1 Integration

There is a shift in the focus of education from the individual to society at large. Previously, a student who had special educational needs was considered to have a problem and the solution to the problem should focus on the student to solve the problem. However, if the class that the

student attends is considered to be a learning community, and the special student as a collaborative worker, then the problem shifts from the individual student to all the students. This conceptualising of inclusion allows inclusion to be considered under the heading of integration. This term *integration* has a more legalistic interpretation than *integration* as meaning a form of mainstreaming. Real integration is achieved by accepting people from minority groups into society and this means transforming society. The discussion changes from one of recognising differences to that of distributing power (Lipsky & Gartner, 1999).

Instead of students with disabilities having to prove their readiness to be in the inclusive setting, the inclusive notion of education views the general education model as one that is normal to meet the moral and educational requirements of all children, including those with disabilities. Inclusive programs must first have a belief in the benefits for children with differing abilities being taught in the same classroom. Key elements for success are support for all students in the class, high expectations of the students, and advocacy for the students by the teachers (Australian Association of Special Education Inc., 2004). Adaptations for students with disabilities benefit all students and inclusive strategies used for these classes are ones recommended by researchers and reformers for the general educational students.

As a school becomes inclusive there are several areas that have to be addressed in order for the practice to be worthwhile. According to a Research Report prepared for the Commonwealth Department of Education, Training and Youth Affairs in February 2001:

> ….change in and of itself does not necessarily lead to good practice. In this sense organisations need to manage the process by developing: A shared vision; a strategic plan; leadership; commitment from members of the school community; team work; shared responsibilities; cooperation and participation; commitment to occupational health and safety; a focus on service users. (Department of Education, 2001, p. 72)

An inclusive school has more in its culture than having children with special needs in its classrooms. It has a history of innovation in education and has improved education on many levels for all students and it celebrates difference in dignified ways. “Above all, it is about a philosophy of acceptance where all people are valued and treated with respect” (Carrington & Elkins, 2002 , p. 51).

The effort to improve the education for the children with disabilities has a beneficial effect on the education of all the children in an inclusive classroom. (Lipsky & Gartner, 1999; Stainback & Stainback, 1990). The school has to make all students feel safe and secure, give opportunities to the students to do school work that is of their standard, and recognise them for their efforts (Strategic Partners in association with the Centre for Youth Affairs and Development, 2001).

Inclusive education is best described in a less prescriptive manner and should be regarded as "a set of never-ending processes" (Booth & Ainscow, 1998, p. 188). Students learn in different ways and to suppose that they can all follow the same curriculum at the same time can lead to an unintended consequence of intolerance to diversity. In the view of these authors just quoted, "inclusion requires support for and the celebration of difference" (p. 188). To recognise some of the differences that exist within the ranks of those involved with inclusive education, an examination of some aspects of family attitudes and aspirations is required.

2.5.2 Support for Students

The terminology used about students who are in an inclusive setting at school implies that they are in need of special help to achieve the educational, social and developmental goals that are set for them. The needs of these children require the additional or different resources to allow them to be active members of the regular school (Olivier & Williams, 2005).

Support for included students in the regular classroom is important for the success of the inclusive model of education. In a study conducted by Dancy (2005), principals and teachers were of the opinion that adequate support had been provided for the success of inclusion. The parents agreed that adequate support had been given to the included students but there was a significant difference in the parents' response to the more positive response of the principals and teachers. The nature of the support is unclear and reasons for the discrepancy were not investigated but various explanations were proposed. Parents are unaware of the various teaching methods used in the school; parents do not know of the resources provided by the school or the district; and parents might have higher expectations of what should be provided for their children.

These explanations raise other questions about why there should be differences in what the school personnel know and believe and what the parents know and believe. Good inclusion practices should expect both sets of responses to be almost the same. The same expectations of non-disabled children and their parents would also need to be questioned.

A study by Rose and Coles (2002), involving 25 teachers in inclusive classrooms, found that 21 of the 25 teachers saw the provision of learning support personnel as essential to enabling these students to cope with the mainstream classes. However, this support usually means more noise in the classroom as the learning support assistants talk and instruct the students who need their help. This was an unexpected result for some secondary teachers who were used to a quiet learning environment, but no primary teacher mentioned it. Although there may be drawbacks to having more learning assistants in the classroom, such as more noise, the teachers in the research program made the point that the assistants can be of help to other students as the occasion arises and this can be of benefit to the whole class (Rose & Coles, 2002).

Having learning support assistants in the classroom certainly seems to be necessary, as recognised by the teachers, but the success depends to some degree on the training of the support personnel. Adequate professional development of all involved in the inclusive classroom is something that seems to have been neglected, to some extent, in the push to have inclusion for all students with disabilities. This development would also take into account the question raised by some teachers about the dependency on the learning assistant that some students develop over a period of time (Rose & Coles, 2002).

Students who do not have disabilities and who are taught in classrooms with children who do have disabilities have to be considered in the inclusion model. Should there be a lessening of the ability of these students to achieve their best then the model would be flawed and be in need of a review. Some research has been done with four high schools on this problem and the results are encouraging. Only a small percentage of those involved (8%) said they did not know about the impact inclusion had on the general students. Across the four secondary schools that were part of this research, the majority of respondents (58%) reported that the other students in the general education classroom remained unaffected by the presence of students with disabilities in their class and about a quarter (24%) thought that the other students improved (Idol, 2006).

The social behaviour of the students was a bigger cause of concern with a larger group of teachers (16 - 33% across schools) reporting a negative impact of inclusion in the classroom (Idol, 2006). Although this was not the majority of the teachers, it would be of concern to any school that was considering inclusion of children with disabilities into its general classes. Parents and teachers of children with special educational needs, and principals of the schools that these children attended, agreed that inclusion makes the regular students more accepting of the children with special needs (Dancy, 2005, 125). No investigation of the attitudes of the regular students and their parents towards inclusion was attempted. The positive response from those involved in the investigation meant that they at least experienced acceptance from their peers as a result of inclusion.

Academic performance of a school is always a concern and so the academic performance of an inclusive school came under scrutiny.

> The results for a school in the statewide testing program are of a concern to all stakeholders. For schools with inclusion policies, the performance in Statewide Tests was striking.
>
> It was found that with one exception, each school made noticeable improvement in average student statewide test scores over a period of 4 years (with built-in controls for test–retest validity). Across the secondary schools, 50% of the time, the statewide test scores had no impact on the overall group results, whether the students with disabilities were included or not included in the data set; 46% of the time, the overall group scores lowered as a result of including the data for students with disabilities. (Idol, 2006, pp. 89-90)

Another example of changing academic performance of a school has been noted is the London Borough of Newham (Jordan & Goodley, 2002). It had the reputation of being the leading school for inclusion after it undertook a series of pioneering radical reforms in its education system during the period 1984-1996. At the beginning of this period, there were over 900 students in special schools and at the end of the reforms there were only 100 students from the district in special schools. The external testing results showed most improvement in the country over a four year period and the A-G test results were among the

highest in the country. This indicates that inclusion has not been detrimental to the education system of Newham.

> We have learned that schools that include all children from the community are better schools all round: they focus much more on children as fully individual humans and cope with issues of bullying, friendship and mutual caring, as well as being able to raise the academic standards, often more quickly than other schools. (Jordan & Goodley, 2002, p. 168)

While an exhaustive investigation into the success of this Newham story does not appear to have been carried out, the public results of the school district give proof to the claims for its success. The actual environment of the school and its classrooms seems to have been changed and have helped with the educational improvement. The school and classroom environments of a small Catholic secondary school are to be researched in this present study and links between classroom environment and student outcomes are to be investigated.

2.6 CHAPTER SUMMARY

This chapter has reviewed the salient literature for this study of the classroom and school environment of a Catholic, inclusive school. It has examined the extensive field of learning environment research and revealed relevant scholarship and methodology for assessing school and classroom environments and relationships between classroom environment and student outcomes. The use of the perceptions of the students and staff were seen to be a valid and parsimonious way of researching the learning environments in schools and the Lewinian formula (Lewin, 1935) and the needs–press theory (Murray, 1938) give a theoretical background for the use of these methods. The dimensions used in the instruments to evaluate the learning environments are based on the work of Moos (1987) who used the dimensions of Relationship, Personal Development and System Maintenance and System Change to investigate many different human environments.

The literature reviewed in this chapter on the Catholic school is full of expressions explaining the mission, community, decision-making processes, teachers as educators, professional development and resources. The literature makes clear the ideals of education for children in

Catholic schools. These important dimensions found in the literature can be used to validate the school environment instrument for the school that is the focus of this project.

The impacts of other influences on schools were considered in the literature. Governments often have a controlling interest in school education and sometimes it is parents who can change the attitude of governments when it concerns the education of their children. There have been great changes in the education of children with special needs in more recent times and the rights and needs of all children have been examined. The literature also raised the issue of self-efficacy of students and its importance in education. The ideal of inclusion for all students has been discussed. The teachers' needs have also gained some attention as they come to grips with inclusive education.

The classroom and school environments were found to be conceptually different, but of importance in any school. Little research has been done on these environments in a regular school that caters for a large number of special needs students in its student population and this has become a matter that is addressed in this study. As more schools become inclusive as a result of legislation and a willingness to be schools of the general community it is important that there is some understanding of how the environments are affected by the process of inclusion. At present, there seems to be a gap in the knowledge of how the classroom and school environments are influenced by the inclusion of a large number of special needs students into the population of a school. There are schools that have significant numbers of special students in Special Units attached to the school but the school that is the subject of this research seems to be unique in the way it caters for such a large number of special students as regular students.

The literature suggests that there are suitable instruments that can be used to discover the classroom and school environments of a school that is considered to be different to other mainstream schools in its population. This study builds upon and extends scholarship on the classroom and school environments in general and, in particular, of the inclusive school. Chapter 3 presents a methodology of researching the environments of such a school.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This study is focused on the exploration of the learning environment of a Catholic school that practices inclusion on a large scale. The school has more than half of its student population as students who have been ascertained as special needs students. The research questions to be addressed in this thesis are divided into three sections: the first section contains the determinant questions, the second contains the relationship questions and the third deals with the model question.

1.1 What are the dimensions of the school environment of an inclusive Catholic school?

1.2a What differences exist between teacher and parent perceptions of the school environment of an inclusive Catholic school?

1.2b What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?

1.3 To what extent do teachers' perceptions of the school environment differ according to gender?

1.4 What are the dimensions of the classroom environment of an inclusive Catholic school?

1.4a To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?

1.4b To what extent do the student perceptions of the classroom learning environment differ according to Junior or Senior level of school?

1.5 What differences exist between student and teacher perceptions of the classroom environment of an inclusive Catholic school?

2.1 What relationship exists between the classroom environment and student academic efficacy?

2.2 What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?

2.3 What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?

3.1 Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?

This chapter discusses the methodology that is used for this study of the school environment and classroom environment for this particular school. The methodology has been chosen to suit the research questions driving the study. Following the tradition of more than 35 years of learning environment research (Dorman, 2003; Fraser, 1998a), the quantitative approach, using a questionnaire, is applied to answer these questions. Reasons for this decision are given in following sections of the chapter.

Governing this research design are the research questions and these involve three main issues: (1) the perceptions of the inhabitants of the learning environment of this inclusive school, (2) the methods used to develop separate instruments for the assessment of the classroom and school environment particularly suited to this school, and (3) the use of quantitative data collection methods.

The discussions in this chapter are concerned with the selection of the participants for the survey, the explanation and justification of the methods used for the survey, and comments on the validity and ethics of the research. These discussions fall into the following sections: Section 3.2 is focused on the important methodological issues including the choice of unit of analysis, the distinction between school and classroom environments and the use of quantitative data collection methods. Section 3.3 discusses the research design for this study, focusing on the overall plan for this research, data collection methods, variables, units of analysis and quantitative data analysis. Section 3.4 provides an explanation for the validity of this thesis. Section 3.5 discusses some of the ethical issues involved in this research. Section 3.6 provides a summary of the chapter.

3.2 METHODOLOGICAL ISSUES

This section deals with the background and definitions that are concerned with the methodology of learning environment research.

3.2.1 Historical and Theoretical Aspects of the Learning Environment Research

The study of the learning environment has been of interest for educators for some considerable time and they have used three common approaches to the study. These approaches have been systematic observation, case studies and assessing student and teacher perceptions (Fraser & Walberg, 1991). The systematic observation and case studies have used *low inference*, direct observational methods, while *high inference methods* over the past three decades have focused mainly on the assessments of perceptions of classroom environments.

Much of the work on the assessments of the perceptions of classroom environment is based on the theoretical and conceptual work of Lewin (1935) and Murray (1938) as outlined in Section 2.1. Lewin recognised that both the environment and personal characteristics of the individual are factors that combine to become potent determinants of human behaviour. "The familiar Lewian formula, B = f(P,E), was first enunciated largely for didactic reasons to stress the need for new research strategies in which behaviour is considered a function of the person and the environment" (Fraser, 1986, p. 6).

Another approach to the study of the classroom environment is the use of naturalistic inquiry techniques and case studies which have supplied much information throughout the 1970s. The validity of using different methods to assess the classroom environment has been proved on many occasions and the similarity of the results has encouraged researchers to continue in this area (Fraser, 1986).

Much of the recent research of the learning environment has used the perceptions of the students and teachers (Kunter & Baumert, 2006). The importance of research on the perceptions of the learning environment, using high inference methods, can be found in previous studies. Numerous research programs (Section 2.1.1) have shown that student perceptions account for appreciable amounts of variance in learning outcomes, often beyond that attributable to background student characteristics (Fraser, 1991, p. 13).

The examination of previous research by Fraser (1998) found that learning environment assessments have been used as a source of dependent and independent variables in a rich variety of research applications spanning many countries. One of the striking features in the

field of learning environment over the past few decades is the availability of a variety of economical, valid and widely-applicable questionnaires that have been developed and used for assessing students' perceptions of classroom environment. There are few areas in education that can boast the existence of such a rich array of validated and robust instruments which have been used in so many research applications.

Past research has shown consistent findings about the influence of learning environments on student morale, interest in subject matter and a sense of academic self-efficacy. These studies have produced evidence to support the benefits and accuracy of the methods to ascertain the perceptions of the learning environment of students and others involved in the environment (Moos, 1991).

Examination of past surveys shows that teachers and students are likely to differ in the way they perceive the actual classroom environment, with the teachers having a more positive perception of the classroom environment than the students. Students commonly have a different preferred environment to the actual environment (Fraser, 1991).

The understanding of the differences of perceptions of individuals has been helped by the formulation of the needs-press theory which gives some insight into the reasons for the development of perceptions in individuals. The needs-press theory, as developed by Murray in 1938, (see Section 2.1.1) is relevant in this present study of a school involved extensively with inclusive practices. Each individual has different psychological needs, depending on each one's capabilities or disabilities, and these needs are the driving energy in the individual's behaviour. This theory, in part, has the needs and press interacting to produce behaviour in an individual (Dorman, 1994). The students inhabit the same learning environment which has been established to satisfy the needs of all the students. The students have personal experiences of the environment and have a perception on how well their needs have been met.

To investigate the *alpha press*, the environment as perceived by an outside observer, the researcher has to investigate the school/classroom by observation, and code the observations according to some scheme of organisation. This direct observation and coding tend to make the alpha press very objective which only the observer might recognise. Since the *beta press* is the perception of the environment by the inhabitants in it, the assessment of it is subjective and hence it is considered to be more influential on the behaviour of the teachers and the

students. The understanding of the differences between objective and subjective psychological environments being due to personality differences can account for the less than perfect relation that may exist between two kinds of psychological environments (Block, 2002).

The *consensual beta press* is the combined perceptions of all the students to obtain an average of the beta press (Fraser, 1991). Since this is a calculated entity, it is quite distinct from the private press and it does give an overall view of the environment.

It is important then for the researcher to try to bring all the subjects to the same press, the same objective environmental pushes and pulls. In this study all the inhabitants of the environment are in the one learning institution and are subject to what is meant to be the same press for all. Students with various difficulties sometimes perceive themselves to have different pressures exerted on them by the environment and hence the subjective view of the environment is different to the objective view.

The distinctions between alpha press, private beta press and consensual beta press are such that the three perceptions of the press could be quiet different. Since this research is concerned with the perception of students, parents and teachers in the learning environment of the school then it is appropriate for the beta press to be the focus of the study. It is important that the design of the research instruments has to include the collection of perceptual data indicating what each student, teacher and parent interprets and responds to in the environment.

3.2.2 Units of Analysis

A further consideration for researchers is the choice of level of analysis for the study. All research investigations have levels and units of analysis.

> A level of analysis is the level of social reality to which theoretical explanations refer. The level of social reality varies on a continuum from micro level (e.g., small groups or individuals) to macro level (e.g., civilization or structural aspects of society). The level includes a mix of the number of people, the amount of space, the scope of the activity, and the length of time. (Neuman, 2004, p. 94)

In this study, it is a small Catholic school which has extensive inclusive practices which will supply the information for the research. It can be categorised as a micro level of analysis. In this thesis the unit of analysis for the school environment is the school staff and the parents since it is the measure of the whole school that is being examined in relation to the school environment, even though the information comes from individuals.

Similarly, for the classroom environment, the unit of analysis is the whole school. In concentrating on the group responses of the students and other members of the school community, an understanding of the group response is obtained, but the individual response is not as significant. Conversely, if the individual student were to be the unit then there would be little understanding of the group (Wagner, 1993). Results of analysis of past research has shown consistent support for the existence of outcome-environment relationships with correlations generally higher in studies involving classes and schools (in contrast to individual students) as the units of analysis (Fraser, 1991, p. 13).

As a matter of practical convenience for the school, the data is collected from the students in whole class settings. In this project, it is possible to average the consensual beta press for the whole school average.

The design of this research is a criterion-group design which is used to make inferences about characteristics by comparing individuals of different ages or grade levels (Tuckman, 1999). Thus students in all the secondary year levels, from Year 8 to 12, are studied to find relationships in their perceptions of the classroom environment. "When the criterion-group design serves this purpose, it is called a *cross-sectional design"* (Tuckman, 1999, p. 187). This will examine the responses at a single instance, like taking a photograph of the situation. A disadvantage of this approach is that it cannot capture social processes or change but it does give some indication of what changes happen as the students become more mature.

3.2.3 School and Classroom Learning Environments

This present study is concerned with both the school learning environment and the classroom learning environment. The school environment and classroom environment are two distinct constructs (see Section 2.1.2) and the data come from different personnel in the environments.

Many studies have been done on schools, classrooms and their environments. These studies have been conducted mainly in primary and secondary schools in many countries but chiefly in the United States and Australia. They have provided consistent and convincing evidence that the quality of the learning environment is an important determinant of student learning (Adams & Adams, 2000; Dorman, 2000).

The school is often considered to have an environment of its own, much like a corporate environment, and this environment has some effect on the classroom environment. Investigations have been carried out on the relationship between the two environments and the data shows the two are not always closely related (Dorman et al., 1997). For the classroom environment, the research is focused on the students and teachers. This gives a more complete picture of the perceptions of what is happening in the education of the students.

In this study, the data for the school learning environment are obtained from the school staff and parents, and the data for the classroom learning environment are obtained from all the inhabitants of the respective environment. Because the school level environment and the class level environment are conceptually distinct, their assessment and investigation require the development of two separate instruments.

3.2.4 Summary of Methodological Principles of the Study

In summary, the principles of this study are as follows:

- Classroom and school learning environments are assessed and investigated solely through the perceptions of the students, teachers, other staff and parents in that environment.
- Questionnaires and quantitative analysis of the results need to be carried out.
- Because classroom learning environment and school learning environment are two distinct constructs, two separate questionnaires need to be developed to investigate these constructs.

3.3 DESIGN OF THE STUDY

To answer the questions of this study, the research methodology follows the tradition that has collected perceptual data from students and teachers in schools in many countries (Fraser & Walberg, 1991). This approach to the collection of data is embedded in the positivist research

paradigm and it reflects the quantitative methodology used in early learning environment research.

This section discusses the issues involved in the design of the study:
Section 3.3.1 discusses the sample used in this study.
Section 3.3.2 states the overall design of the study.
Section 3.3.3 provides an overview of the variables and data analysis to be used in the study.

3.3.1 Sample of Study

Since the study is concerned with one school only, the selection of the sample for the study is simplified. The school has a student population of 230 and this number of students is divided into twelve separate classes. It is quite reasonable to use all these students in the collection of data instead of sampling from each group. Thus the whole student population of the school is invited to give their perceptions of the classroom environment.

Nearly half of the students at the school have been ascertained with a disability. Many of the remaining students have not been ascertained, either because their disability is not severe enough, they have not gone through the process of ascertainment, the parents do not want an ascertainment, or they have no disability. All the students attend the school as a result of a choice of the parents or guardians and sometimes this is not what the child would have desired. There is much anecdotal evidence to suggest that there are some children at the school who see themselves as being unfairly treated by being sent to the school which they see as not catering for their perceived significantly higher academic needs. This may lead to some participant bias in the perceptions of the students.

Staff of the school is made up of 26 teachers, 4 in administration, 3 office personnel and about 20 student support personnel (full and part-time). This population of the school staff are invited to give their perceptions of the classroom environment and the school environment. Since the school and classroom learning environments are two distinct entities, the students are only invited to be involved in the classroom environment questionnaire.

Parents and/or guardians of the students are also part of this study. People see and recognise a school as the one they are interested in selecting for their children to receive their education.

This research is meant to find out how people see the school of focus in its context and "because each person's subjective world view shapes how he or she acts, the researcher attempts to discern others' reasoning and view of things" (Neuman, 2004, p. 37).

Parents or guardians of the students are the ones who select the school their charges are to attend and they have a definite view of the school they are selecting. The perceptions of the school by the parents/guardians of the students are important to recognise and explore. The parents choose this school for their children, thinking it is the right one for them, even though some parents know that it may take the child up to one and a half hours to travel to school by public transport each day. Many of the students at the school live a considerable distance from the school and, as a result, the school cannot be compared in its population to a local neighbourhood secondary school. Parents seek out information to allow them to choose enrolment of their child in a school that they think is suitable, particularly if the child has some form of difficulty at school. The problem of the distance to be travelled daily by the student is weighed up against the perceived advantage of attending this school and parents are often burdened with extra transport costs when they choose this school for their child. The perceptions of the parents are, therefore, very much concerned with the school environment and they are invited to take part in the study.

3.3.2 Overall Design of the Study

Because this research is conducted in a school that is different to most other schools in the area of inclusion of special needs students, it is important to develop context-specific instruments that are relevant to this school.

The development of the instruments to investigate the school-level environment and classroom level environments draws on the work of previous learning environment researchers and uses four criteria for the development of the instrument: consistency with the literature, coverage of Moos' three general categories, salience of stakeholders, and economy (Dorman et al., 1997).

Research of the socio-psychological environment in the classroom is based on perceptual and judgemental variables, particularly those that are rated rather than counted (Walberg & Haertel, 1980). The perceptions and judgements are not found from outside observers, but are

obtained from the students themselves who are directly involved in the learning environment. Students form a group of "sensitive, well-informed judges of a class" (Walberg & Haertel, 1980, p. 226) and are better able to produce data that a single well trained, outside observer would not be able to obtain because the observer may be insensitive to the environment inside and outside the classroom.

These subjective ratings of the perceived behaviour of students are referred to as high-inference measures. Low inference measures are concerned with specific teacher or student behaviour and are recognised and counted by an observer. The low inference measures have the advantage that they can be used to suggest changes to behaviour that will improve a given outcome. However, they are generally less valid at predicting learning outcomes than are high inference measures (Dorman, 2001; Walberg & Haertel, 1980). As a result, the high inference measures have underpinned the learning environment research over the past 35 years and high-inference beta measures have been used in the contemporary learning environment (Kennedy, 2006).

High inference measures of classroom environment have been promoted. "Students seem quite able to perceive and weigh stimuli and to render predictively valid judgments of the cohesiveness, democracy, goal direction, friction, and other psychological characteristics of the social environments of their classes" (Walberg, 1976, p. 160). This does not mean that the high inferences measures are the only ones that should be used but they are very useful and relatively simple to use in obtaining reliable data from the inhabitants of the classroom environment.

However, it is important to keep in mind that the researcher does not come to a study unencumbered with previous ideas and perceptions.

> Scholars' particular analytical orientations may be as consequential for the findings that they create as the particular methodological procedure that they use. Background assumptions shape not just the selection of technique; they color the way any particular method is employed and the manner in which the findings are worked up. (Harris, 2003, p. 203)

Two stages of the design of the research are devised, as shown in Table 3. Stage 1 is the initial development and validation of the instruments to find the data that will answer the research questions. The development of the instrument is described in detail in the next chapter. Previous research projects and instruments are examined to aid the development of a content specific instrument to suit this school. Parents are asked for information at parent/teacher interviews to investigate their early perceptions of the school to meet the needs of their children in education. Stage 2 is the administration of the instruments to the students and other adults to collect the data required. The students are required to answer one questionnaire on the classroom learning environment and the staff are asked to respond to two questionnaires, one on the classroom learning environment and one on the school learning environment. The parents are required to answer the instrument on the school environment.

Table 3.1

Stages of the research program

Stage	Process	Time Line
Stage 1	Development of high inference measures of beta press at the class and school level	
	Part A – Examining instruments from previous research on school and class level environments	December, 2007
	Part B – Inviting parents to supply perceptions of why they chose the school for the education of their children.	February, 2008
	Part C – Development, refinement and trial of the instruments for the classroom and school environment.	March, 2008
	Part D – Obtain ethics approval from the Australian Catholic University and Brisbane Catholic Education to conduct the research in the school.	
Stage 2	Administration of the instruments in 2008 to collect data from students and staff on the classroom learning environment and from the staff on the school learning environment	May, 2008

A good deal of the research on learning environments is based on the work of Moos (1987) who found that the same three general categories can be used in conceptualising the individual dimensions characterising different psychosocial environments (Fisher & Grady, 1998, p. 335). The three categories of dimensions emerged from the work by Moos in a variety of environments including hospital wards, school classrooms, prisons, military companies, university residences and work milieus. The dimensions are named as Relationship dimensions, Personal Development Dimensions, and the System Maintenance and System Change Dimensions.

The instrument development was based, in its early stages, on the work of Moos and the Classroom Environment Scale (CES) (Moos, 1987). This was developed to assess the educational environments of junior high and high school classes in regular, vocational and alternative schools. This scale taps into the three climate domains mentioned above.

Relationship dimensions: involvement, affiliation, teacher support.
This dimension identifies how involved people are in the setting, the strength and the nature of the personal support that people receive in the environment and their personal relationships (Fisher & Grady, 1998; Moos, 1987).

Personal growth dimensions: task orientation, competition.
This dimension assesses the direction along which personal growth and self-enhancement tend to occur. In schools, this dimension tends to focus on performing tasks and competition (Fisher & Grady, 1998; Moos, 1987).

Systems maintenance and change dimensions: order and organisation, student influence, innovation, clarity.
This dimension assesses the extent to which the environment is orderly, maintains control and is responsive to change. In schools, clarity has an emphasis of following a clear set of rules and on the students' knowing the consequences if the rules are not followed (Fisher & Grady, 1998; Moos, 1987).

While taking into account the previous research in schools that can be termed "normal", the present study is about a school that is different to the "normal" school in that it has a large number of special needs students in its population. The introduction of inclusive schooling and the increasing diversity of learning needs "have forced school staff to change their approach to the organisation of students, models of support, teaching staff roles, and approaches to teaching and the curriculum" (Carrington & Robinson, 2004, p. 142).

The study of the learning environment in schools that cater for students with special needs has taken place infrequently in the past and some findings show that the impact of initiatives of governments for the special needs sector can be mediated by the schools themselves. This action by the schools has a notable impact on the way the school delivers its services to the

students. “Thus the school level environment might be highly significant in the special sector” (Adams & Adams, 2000, p. 2).

Existing school level environment questionnaires, especially the CSEQ were examined in the development of The Special School Level Environment Questionnaire (SSLEQ). Since this questionnaire was developed for a school that had a special ethos, segregated children who had special needs, then it might be expected to have dimensions that are in common with other schools and also have others that are related solely to its own particular purpose (Adams & Adams, 2000). Since the school in this present study is not a special school, SSLEQ needs to be examined as there are enough common elements to provide a good reference questionnaire for the development of a context-specific survey for the school level environment. Seven dimensions of the school level environment that were used in the SSLEQ are described in Section 2.1.2

There has been some research done up to the present time on the classroom level environment of classes that are using inclusive practices. Few of these classes have a large number of special needs students in them. The development of the instrument to collect data on the perceptions of students in classrooms that do have a large number of special needs students is new and requires the use of an instrument that is easily understood, does not take too much time, and requires an easy method of making responses.

The instruments to be used in this study of the classroom environment are contextually modified versions of What is Happening in this Classroom (WIHIC) and Patterns of Adaptive Learning Scales (PALS). The WIHIC instrument has been used in a number of schools to capture data on the classroom environment. It will be modified to make it context-specific for the present school being researched and the language and length need to be simplified for its intended clientele. Since the teachers are also involved in the classroom environment data, some of the questions have to be modified for the adults. For example:
Student item – ‘I make friends among students in this class.’
Adult item – ‘Students make friends in this class’.
Similarly, items from PALS that are to be used will be selected for their application to this research and modified if the wording is not suitable.

3.3.3 Variables and Data Analysis

This section deals with the variables used in this study and their justification, and discusses the procedures used for analysing the quantitative data.

Variables

The study focuses on the classroom learning environment, and the school learning environment, in a small Catholic secondary school that has a large number of special needs students in its population. In this study there are two types of variables to be measured: independent and dependent variables. A detailed description of the identification and definition of the environment variables is to be found in Chapter 5 of this thesis. The measurement of these variables is achieved by using content-specific instruments developed for this purpose. A questionnaire format is used as the measurement of the perceptions of students is relatively inexpensive and unobtrusive to administer and process (Walberg et al., 1973). Strengths of the perceptual measures can be listed as follows:

- Surveys (paper-and-pencil measures) are more economical than observations in the classroom by trained outside observers.
- Perceptual measures are based on experiences over many lessons while observational data are usually restricted to a small number of lessons.
- Perceptual measures involve the combined judgements of the students of the class, while observations are usually done by a single observer.
- Students' perceptions usually determine the students' behaviour more so than the real situation and can therefore be more useful than observed situations.
- Perceptual measures of the classroom environment have been shown to account for more variance in student learning outcomes than have observed variables (Ellett, 1986; Fraser, 1991).

For the classroom learning environment the independent variables in this study included: gender, school year, religion, and Junior/Senior school.

Gender. Investigating the effect of gender is important in this particular study. The student population is not evenly distributed in terms of gender, there being a predominance of males at this present time. Should there be a difference in the gender effect, the school might consider changes in its organisation.

School year. Investigating the effect of the school year is one way of obtaining information of the maturation process in the school. It is commonly thought that the different year levels have different environments. This is based on the notion that the maturity, needs and motivation of 16 and 17 year olds is different to that of the 11 and 12 year olds. This effect usually leads to different treatment of the different year levels.

Religion. The school in the study is a Catholic school and it proudly acknowledges this in its everyday practices. Many of the students are not Catholic and have come from schools with different traditions, many from State primary schools. Investigating the effects of religion on the classroom environment in this school is a worthwhile project and the perceptions of the different groups are of great interest.

The dependent variables of the environment were the dimensions of the classroom environment as perceived by the students and others. These include Student Cohesiveness, Teacher Support, Involvement, Task Orientation, Investigation, Cooperation and Equity. The variables are summarised in Table 3.2.

Table 3.2

Variables for analysis in Classroom Environment

Background and Independent variables	Psychological outcomes
Gender	Student Cohesiveness
School year	Teacher Support
Religion	Involvement
	Task Orientation
	Investigation
	Cooperation
	Equity

Data analysis

Table 3.3 provides a summary of the methods to be used for the collection and analysis of the data. For the responses to the research questions 1.1 and 1.4, the data are to be found in the development of the instruments with reference to the SSLEQ and WIHIC, and with consultation with school personnel and parents.

Multivariate analysis of variance (MANOVA) is used on the data of the responses to questions 1.2, 1.3, 1.5 and 1.6 and this preserves the conceptual differences of the

environment scales. The use of MANOVA, which allows the several dependent variables to be analysed simultaneously, is preferable to a series of Analysis of Variance (ANOVA) tests because the MANOVA gives an indication of the overall relationship between the set of dependent variable and the independent variables. In this present study, ANOVAs (one for each dependent variable) is used only when it was thought necessary to provide more detailed results.

Table 3.3
Summary of research questions and the methods collecting and analysing data

Research question	Data collection instrument	Data analysis technique
1.1 What are the dimensions of the school environment of an inclusive Catholic school?	CSEQ and SSLEQ	Instrument development and validation procedures
1.2a What differences exist between the teacher and parent perceptions of the school environment of an inclusive Catholic school?	Modified SSLEQ	MANOVA
1.2b What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?	Modified SSLEQ	MANOVA
1.3. To what extent do teachers' perceptions of the school environment differ according to gender?	Modified SSLEQ and CSEQ.	MANOVA
1.4. What are the dimensions of the classroom environment of an inclusive Catholic school?	WIHIC and PALS	Instrument development and validation procedures
1.5. To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?	The modified classroom environment questionnaire	MANOVA
1.6.What differences exist between student and teaching staff perceptions of the classroom environment of an inclusive Catholic school?	The modified classroom environment questionnaire	MANOVA
2.1. What relationship exists between the classroom environment and student self-efficacy?	The modified classroom environment questionnaire	Correlation
2.2. What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?	The modified classroom environment questionnaire	Correlation
2.3. What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?	The modified classroom environment questionnaire	Correlation
3.1 Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?	The modified classroom environment questionnaire	LISREL

According to Stevens (2002), three statistical reasons favour MANOVA. First, the use of a series of univariate ANOVAs leads to an inflated overall Type 1 error rate. Second, univariate tests ignore the correlation among the variables. Third, multivariate tests are more powerful, especially where small differences on several variables combine to produce a significant result. It can occur that none of the individual ANOVA results is significant, even though the MANOVA result is significant. The level of significance accepted for all statistical tests was .05.

To report the strength of associations between the seven classroom environment scales and the four outcome scales, simple, multiple and canonical correlation analyses were performed. A simple correlational analysis was used to investigate the relationship between each classroom environment scale and each outcome scale. Additionally, a stepwise multiple regression analysis explored models using the seven classroom environment scales as predictors of each outcome scale. The use of multiple regressions reduces the risk of an inflated Type 1 error rate associated with a series of simple correlational analyses. The standardised regression coefficient (β) was used to identify which classroom environment scales were statistically significant predictors of student teacher efficacy scales.

Canonical correlation was used to establish the strength of the relationship between the set of seven classroom environment scales and the set of outcome scales. It is more parsimonious than multiple regression and overcomes the possible inflated Type 1 error problem in multiple regression due to relationships among the dependent variables (Stevens, 1992). The canonical correlation coefficient (R_c) represents the highest correlation between two transformed variables – one formed by a linear combination of dependent variables and the other formed by a linear combination of the independent variables. Additionally, because R_c^2 cannot be used to interpret variance overlap between the seven classroom environment scales and the four outcome scales, a redundancy analysis that provides meaningful information on variance overlap was conducted (Stewart & Love, 1969).

While correlational analyses are important in their own right, they served another important purpose in the present study. Based on the information from these analyses, a baseline or *postulated* model was developed for testing using structural equation modelling (SEM) with

LISREL 8.3 (Jöreskog & Sörbom, 1993). Such models attempt to bring together all salient information about the predictor and dependent variables in the one model. In the present study the seven classroom environment scales were the predictor variables and the four outcome scales were the dependent variables. Structural equation modelling examines relationships among *latent* variables. Such variables are not measured directly. Their values are indicated by observed variables. For example, in the present study, the latent variable Teacher Support was indicated by an observed variable computed from the Teacher Support items.

Munck (1979) showed that loadings of paths (λ) which link observed variables to latent variables and error variances (θ) for observed variables can be fixed in structural equation modelling and that, provided correlation matrices are analysed, they are related to scale reliability (r) by the formulae

$$\lambda = \sqrt{r} \qquad \text{and} \qquad \theta = 1 - r.$$

These formulae allow for paths from observed composite variables to latent variables and error variances of observed composite variables to be fixed. The advantage of this theory is that the number of parameters to be estimated by LISREL is sharply reduced with consequent improvement in model robustness.

Of the many indices available to report model fit, model comparison and model parsimony in structural equation modelling, three indices are reported in this thesis: the Root Mean Square Error of Approximation (RMSEA), the Tucker-Lewis Index (TLI) and the Parsimony Normed Fit Index (PNFI). Whereas the RMSEA assess model fit, the TLI and PNFI assess model comparison and model parsimony respectively. To interpret these indices, the following rules which are generally accepted in the SEM literature as reflecting good models were adopted: RMSEA should be below .05 with perfect fit indicated by an index of zero, TLI should be above 0.90 with perfect fit indicated when TLI = 1.00, and PFNI should be above 0.50 with indices above 0.70 unlikely even in a very sound fitting model. Further discussion on indices and acceptable values is provided in Byrne (1998), Kelloway (1998)and Schumacker and Lomax (1996). The results of χ^2 tests that examine the fit of the model to the data were also reported.

Modelling statistics reported in this thesis included squared multiple correlation coefficients (R^2) for each structural equation. In addition to overall fit statistics, it is important to consider the strength and statistical significance of individual parameters in the model. Each path was tested using a *t*-test ($p < .05$).

3.4 VALIDITY AND RELIABILITY

It is essential to have validity and reliability in the research design for any significant study. This section explores the internal and external validity of this study.

The instruments used to collect data are required to be reliable and valid. The reliability of a measurement is indicated by its consistency and dependability. A reliable measurement is one that can be reproduced with practically the same value if the measurement were readministered. Validity of an instrument refers to the implication that the instrument measures what it is supposed to measure.

"In many ways, internal validity is the *sine qua non* of good experimental research" (Crano & Brewer, 2002, p. 32). Without having internal validity, the external validity of a study is meaningless. However, research that is internally valid is not therefore a valid study. The external validity has also to be shown to be robust. Attention to the detail in the items of the instrument is essential and Chapter 5 details the instrument validity and reliability.

Internal validity

Internal validity is the ability to eliminate external or alternative explanations for the dependent variable, otherwise there is a threat to the internal validity of the measurement (Neuman, 2004). "Internal validity is about the extent to which causal inferences can legitimately be made about the nature of the relationship between the treatment and the outcome" (Crano & Brewer, 2002, p. 22). Eight major threats to the internal validity have been discussed and enumerated by Campbell and Stanley (1963 as cited in Crano & Brewer, 2002) and are as follows: History, maturation, testing, instrumentation, statistical regression, selection, experimental mortality and selection-history interactions (Crano & Brewer, 2002).

Selection. The ethics of any social science research requires that the participants are willing to be part of the study. Since all the groups involved in the study, students, staff and parents, were asked to volunteer to take part in the survey, the threat of any selection bias is overcome.

History, maturation, testing, statistical regression, mortality. Since the survey was administered only once to all the participants during the same period of time, these possible threats were not considered to be a serious hindrance to the study.

Instrumentation. The development of the instruments for the study is discussed in detail in the following chapter and the elaboration of the validation strategies is explained. Teachers of the English classes were asked to administer the questionnaire to the students and the parents had their questionnaires sent home to them. The teachers and staff completed their surveys at school. In all cases the participants were informed that there were no right or wrong answers and that the responses would be strictly confidential. The correct administration of the survey to the students relied on the professional integrity of the staff. In this way the threat to the internal validity of the research due to instrumentation was minimised.

Selection-history interactions. There was no selection of participants from a larger population and the whole school was invited to participate in the study. The history of each class is independent of the other classes. As a result, the selection-history interactions are minimal. It has to be understood that the classes are of different age groups and are at different levels of maturity, and as outlined in Section 3.2.2, the comparisons of perceptions of different classes cannot capture social processes or change but they do give some indication of what changes can occur as the students become more mature.

Experimenter Expectancy. This further threat to the internal validity of the study is the expectancy that the researcher is able to convey to the participants. The researcher in this study did not administer any of the questionnaires and all participants were informed of the confidentiality of their replies, so this threat was not relevant.

External validity

Even when the internal validity of the research is high, there still remains the concern "about the validity of *interpretations* of causal effects obtained in any given study, particularly their applicability or generalizability outside the experimental setting. These concerns constitute

questions of external validity" (Crano & Brewer, 2002, p. 32). These questions are divided into two main areas: (1) generalisability of operationalisations and (2) generalisability of results to places and participant populations and are discussed in the following headings.

Failure to describe independent variables explicitly. The description of the independent variables is to be found in Section 4.3.3 and the variables are Gender, School year, and Religion.

Inadequate operationalising of dependent variables. The dependent variables are sets of school environment and classroom learning environment scales that have been developed for schools over many years and some of these have been selected as having particular reference to this school. Chapter 5 describes how these scales have been operationalised to enhance the generalisability of the findings.

Lack of representatives of available and target populations. Since the whole target population of the study was used in the research, there has been no effect on the validity of the study as there has been no selection of a sample population. This threat did not apply to the study.

Hawthorne Effect. The Hawthorne Effect "refers to the tendency of people to act differently simply because they are aware of their role as research subjects" (Dorman, 1994, p. 106). Because the participants were invited to take part in the study and were given a questionnaire to answer, they knew they were taking part in a data gathering exercise. The questionnaire was kept as short and as simple as possible in the expectation that the subjects would give authentic answers and not be influenced unduly by their involvement in the study. Thus, this threat to the study was minimised.

Demand Effect. As participants were unaware of the questions and the dimensions of the learning environment being investigated, they would have not been able to modify their answers to supply what they might have thought was demanded from them for the study. This threat to the validity of the research was addressed.

3.5 ETHICAL ISSUES

Consideration of the ethical issues involved in this research has to be given due importance (Tuckman, 1999).

Privacy. The subjects are all given the option of participation or non-participation from the very beginning of the project. The students have to gain the written consent of their parents/guardians before they participate and there is the complete freedom to make the choice of participating or not.

All participants are informed that they would remain anonymous and no information from the questionnaires would be transmitted in any way that would allow the participants to be identified.

Confidentiality. All the information gained from the research would remain the property of the University and kept secure for a period of five years. The overall results would be made known to interested parties involved in the research and any publication of the results would not name the school involved.

Researcher's responsibility. The researcher is not involved in administering any of the questionnaires to the subjects and is distanced from any circumstances that might influence the responses to the questionnaires.

3.6 CHAPTER SUMMARY

The purpose of this study is to investigate the classroom and school level environments of a small Catholic secondary school that has a large number of special needs students included in its classes. This chapter provides a detailed discussion of the particular methodological issues and decisions of the study. Two methodological principles which incorporated the present state of learning environment research were developed. These principles required: (1) the development of a school level environment and a classroom level environment questionnaire and (2) the assessment of the perceptions of the inhabitants (students, staff and parents) in response to the questionnaires that would lead to answering the questions driving this research.

The importance of the unit of analysis was discussed. It was decided to use the class mean as the unit of analysis for the classroom environment analysis and the school mean for the school environment analysis.

A two stage research program that operationalised the methodological principles of this study was adopted. In the first stage, the questionnaire was developed using information from parents and teachers, and suitable learning environment instruments. This development is shown in detail in Chapter 4.

The second stage involved the administration of the school environment and the classroom environment questionnaire to the appropriate sections of the school community. This was done in the same timeframe. Analysis of the data was carried out by the use of MANOVA and ANOVA, where appropriate, in order to investigate the influence that the three independent variables (gender, age, religion) might have on the school or classroom environment and relationships between the classroom environment and the teachers' and students' perceptions.

Ethical concerns that accompany this research have been given due consideration and taken into account.

CHAPTER 4

DEVELOPMENT AND VALIDATION OF INSTRUMENTS

4.1 INTRODUCTION

This chapter discusses the development and validation of the instruments used in this study of the psychosocial environments of a small Catholic secondary inclusive school. Since school environment and classroom environment are two distinct constructs, (see Section 3.2.3) there was the need to develop two distinct instruments for these areas. The general procedure was to use existing instruments as the main structure for the school and classroom environment instruments of this study. As the school is unique in its student enrolment pattern, existing scales and associated items had to be modified and new items added assess the distinct environment of this school.

There are four approaches typically used to develop personality inventories: intuitive rational, intuitive theoretical, factor analytic and empirical group discrimination (Fraser, 1986; Hase & Goldberg, 1967). The empirical group discrimination method attempts to align scales according to some external criterion and requires pretesting before the scales are constructed using items that maximise discrimination between groups of respondents. The factor analytic approach uses factor analysis to group items solely on the responses of a sample group of the target population being investigated. The intuitive rational and intuitive theoretical approaches use the subjective opinions of the investigator and other experts to develop the scales and the items to assess these scales. The rational approach does not use any psychological theory for the construction of the scales while the theoretical approach uses a formal theory to develop the scales and items. Subsequent statistical testing of the reliability of the scales allows for the refinement of the instrument. The development of the instruments described in this chapter used the intuitive rational approach which relied on the intuitive understanding of the scales by the researcher and other people with knowledge of the school context.

The remaining sections in this chapter address the following three areas. Section 4.2 discusses, firstly, the criteria used for the development of the instruments adopted for this study and secondly, the instrument development and validation procedure used. Section 4.3 reports on the application of the development and validation procedure to the school

environment instrument. Section 4.4 reports on the application of the development and validation procedure to the classroom environment instrument. A summary of the chapter is provided in Section 4.5.

4.2 INSTRUMENT DEVELOPMENT CRITERIA AND INSTRUMENT DEVELOPMENT AND VALIDATION PROCEDURE

This section discusses the instrument development criteria and the instrument development and validation procedure adopted for this study of the classroom and school environments of a small Catholic inclusive secondary school. An important distinction has to be made between the *criteria* and *procedure* for the development and validation of the instruments to be used for this study. The instrument development criteria are concerned with the standards of judgement, rules or principles that can be used to guide instrument development. These criteria, on their own, do not indicate explicitly the specific decisions that are taken during the development process. The decisions made in the development process have to be reported and justified and it is the criteria selected that allow this to be done in a logical and valuable way. Therefore, it was considered important to the present study that both instrument development criteria and instrument development and validation procedure be established. Clearly, the development and validation procedures need to reflect the development criteria standards adopted for this study.

4.2.1 Instrument Development Criteria Adopted For This Study

Drawing on the scholarship and processes underlying the work of previous learning environment researchers, four instrument development criteria were established for this study: consistency with the relevant literature, coverage of Moos's three general categories of the human environment, salience to the stakeholders, and economy.

1. Consistency with Literature. The instruments were to be consistent with the literature on classroom and school environment. The purpose and mission of a Catholic school and also the ideals and aims of inclusion of special needs students in a regular school have to be considered. Chapter 2 of this thesis highlights some specific aspects of a Catholic secondary inclusive school.

2. Coverage of Moos's Three General Categories. The dimensions of the instruments are important conceptual issues that provide a means of measuring the specific aspects of the human environment that is being explored. Moos's (Moos, 1979; , 1987) schema for conceptualising human environments suggests that any instrument assessing the psychosocial aspects of the human environments should have the following three dimensions: (i) Relationship dimension: how involved people are in a setting, how much they help each other and how they express their feelings. (ii) Personal growth dimension: how the environment encourages or stifles personal growth. (iii) System maintenance and change dimension: how orderly and organised is the setting, how clear are the expectations and the maintenance of control and response to change. The instruments designed for this research project covered these categories of the human environments.

3. Salience to the Stakeholders. As the school is considered to have a special character that distinguishes it from other schools, it was important that the administrators, teachers and parents were involved in the development of the instruments. This criterion ensured that the instruments explored the characteristics of this particular school.

4. Economy. To cater for the special character of the school that is the focus of this research, it was important to have instruments that were economical in the time required for administration and scoring. The number of items had to be kept to a minimum consistent with statistical implications because the particular students at the school sometimes find it difficult to concentrate for extended periods of time.

4.2.2 Instrument Development and Validation Procedure

Classroom Environment Instrument

To provide a framework for the development and validation of the instrument to assess the classroom environment a four step process was implemented (see Figure 4.1).

Chapter 2 provides a brief history of the development of some of the instruments to assess the classroom environment. From this collection of classroom environment instruments, a decision was made to select one to use for this research. Expert advice was also provided to help with the selection process which had to give consideration to the Moos's categories and

the scales contained in them. As well as the classroom environment questionnaires described, consideration also had to be given to the teacher mastery and performance goals, and the student's self-efficacy. The literature (Hoang, 2008; Midgley et al., 2000; Ogbuehi & Fraser, 2007; Rickards, Brok, & Fisher, 2005) provided information on items that would assess these scales and appropriate items were selected to be included with the classroom environment items. When all these items had been selected and the scales named, the stakeholders were then asked to comment on the overall design of the instrument. Thus the criterion "Salience to the stakeholders" was fulfilled and while the approval of the instrument was very high there was the universal comment of those consulted: "Don't make it too long". The criterion of "Economy" was an essential element for the project.

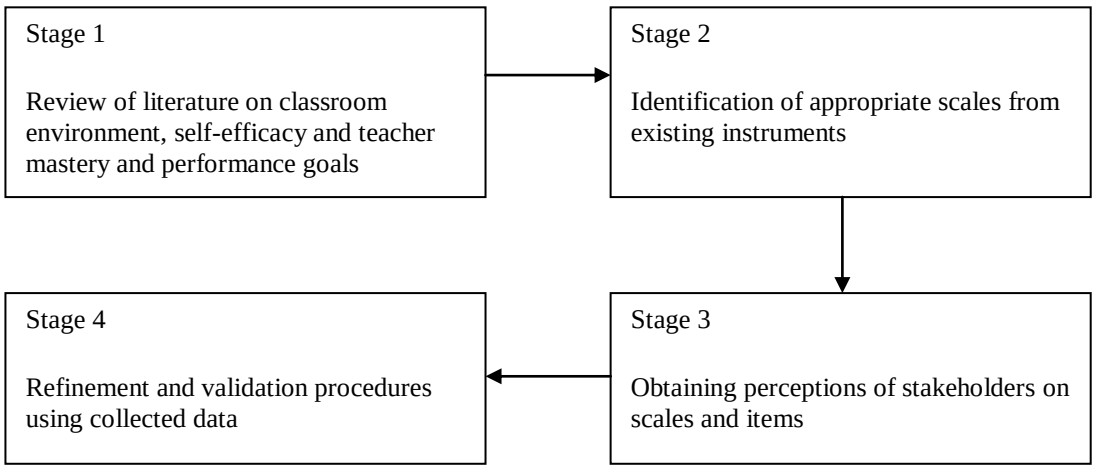

Figure 4.1 The four-stage instrument development and validation procedure for classroom environment

School Environment Instrument

A similar process for the development and validation of the school environment instrument was adopted. An additional stage has been added to account for the decisions to be made about the scales to be selected for the instrument and this is illustrated in Figure 4.2. A review of the literature on Catholic schools and inclusive schools in Chapter 2 identified a multitude of important characteristics of the environment of a Catholic secondary inclusive school. A function of Stage 1 of the procedure was to bring these literature-based characteristics into the instrument development process.

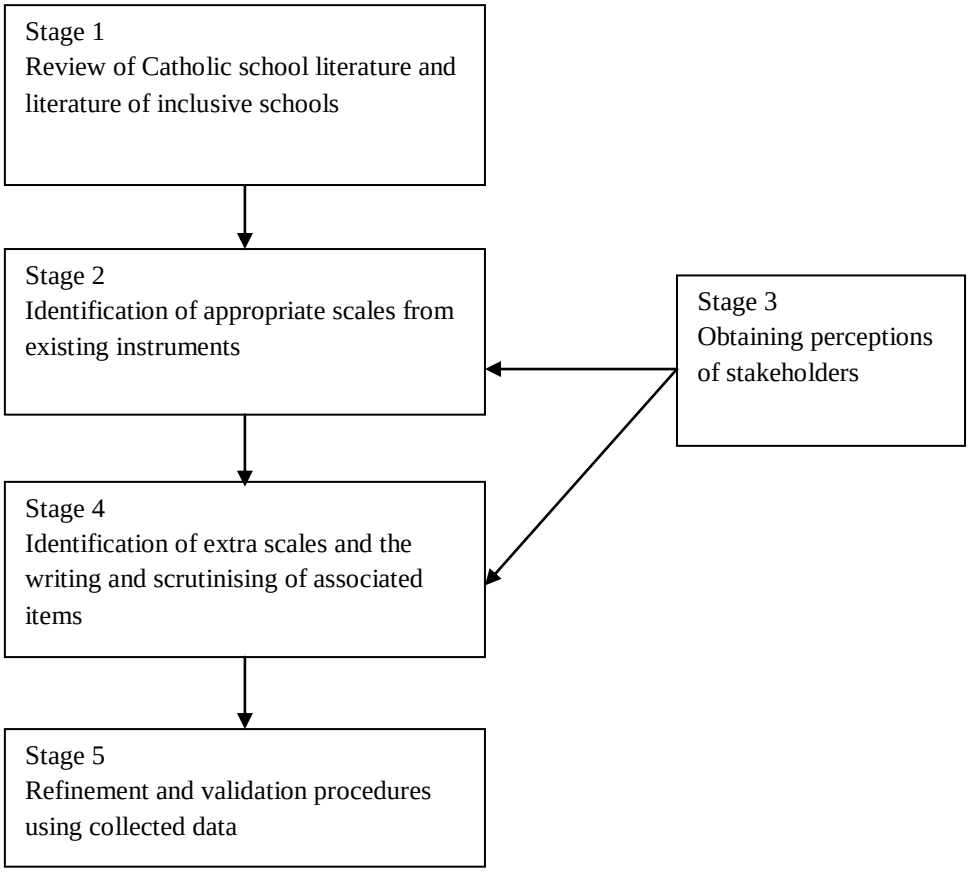

Figure 4.2 Five-stage instrument development and validation procedure for school environment instrument

The second and third stages were processed concurrently, with the stakeholders having a participant's role in the selection of appropriate scales for the instrument. The principal, three teachers and ten parents were informally interviewed separately and their views were sought on what they thought added to the school environment from the list provided. The parents had all come to parent/teacher interviews and were asked what they thought of the school and why they chose it for the education of their children. This led to a general discussion of the school environment of this particular school and some comments are recorded in Appendix A. The selected members of staff were given a list of items and scales, asked for their comments and to add any extra items or eliminate any from the proposed instrument. The scales and items were then selected with expert advice and the instrument prepared for the staff participation. Parents were given a shorter version containing the three scales that were appropriate to them. The items remained the same as for the staff instrument.

4.3 DEVELOPMENT AND VALIDATION OF CLASSROOM ENVIRONMENT INSTRUMENT

This section reports the specific aspects of the development of the classroom environment instrument. It follows the five steps of the development and validation framework discussed in the previous section. The final instrument produced by this process was a 52-item questionnaire with 11 scales for the student form and a 47-item questionnaire with 10 scales for the teacher form.

4.3.1 Classroom Environment: Literature

Most of the official literature from the Catholic Church on education has been concerned with whole school environments and little has been said about the classroom environment as a specific entity. The important issues raised concerning Catholic schools in Section 2.2 are addressed in Section 4.4 which attends to the school environment and these also have to be taken into account when the classroom environment is discussed. An important issue raised throughout the literature is that of relationships in schools: relationships between administration and staff, teachers and students, students and students and between parents and school. Not all of these relationships are able to be assessed through the classroom environment but "Inspired by the Holy Spirit, we challenge those we educate to live in communion with God, others and the whole of creation in prayerful, sacramental, just, peaceful, inclusive and reconciling communities" (Brisbane Catholic Education, 2007b, p. 10). Thus, relationship is one dimension that must be included in the classroom environment of a Catholic school and Brisbane Catholic Education as the intention to "build strong partnerships among staff, students, parents and parish that are underpinned by the religious and evangelising mission of each school (2007b, p. 23).

Other dimensions to be included in the classroom environment instrument to be used for this research are to be found in the considerable research and development over more than 50 years. Many tested and validated questionnaires are available for general use (Fraser, 2007; Smith & Pellegrini, 2000). In consultation with the school administration and experts in the field of classroom environment, it was decided that the instrument *What Is Happening in This Classroom* (WIHIC) would be the most suitable instrument for this project. This instrument has had extensive development and validation performed on its data from many students in

different countries and it has been found to be valid and reliable (Fraser & Goh, 2003) (see Section 2.1.1).

In its usual form, the WIHIC has eight items for each of its seven scales. The scales are placed in the three general categories according to Moos's schema (1974): Relationship: Student Cohesiveness, Teacher Support and Involvement; Personal Growth: Investigation, Task Orientation and Cooperation; and System Maintenance and Change: Equity. These scales have been validated for classroom environment for many schools, Catholic and non-Catholic, and it was considered that they would be applicable in this situation as well.

4.3.2 Scales for Classroom Environment

The seven scales of the WIHIC (Student Cohesiveness, Teacher Support, Involvement, Investigation, Task Orientation, Cooperation and Equity) were presented to the Administration of the school and they concluded that it would be well suited to what they would like to assess in their school.

Most of the students (greater than 80%) have some difficulty with reading so "Don't make the questionnaire too long" was a comment from all staff who were consulted. To accommodate this recommendation, the original WIHIC instrument had to be made shorter by removing items from each of the seven scales. Therefore, to improve the economy of the instrument, it was decided to reduce each WIHIC scale to five items. Based on previous research conducted with the WIHIC (Dorman & Fraser, 2009; Dorman, 2008; Dorman, Aldridge, & Fraser, 2006), five items from each scale were identified as providing the best scale internal consistency reliability. Thus the seven 5-item scales were considered to be a valid representation of the original WIHIC.

4.3.3 Selection of Outcome Scales

To gain the data on student self-efficacy and student perceptions of teacher's mastery goals and teacher's performance goals, items from *Manual for the Patterns of Adaptive Learning Scales* (PALS) (Midgley et al., 2000) were selected. PALS has undergone extensive testing and validation over the past decade and is considered to be a reliable source of items and is very suitable for this research. These scales are shown in Table 4.1 and collectively they

added another 17 items to the instrument, bringing the total number of items to 52. Those consulted thought this to be a manageable size for the students but there was a need to make sure that learning support staff was available to help students who had any difficulty with the reading and comprehension of the questionnaire. The teacher mastery and performance goals scales and items were thought to be appropriate by the teachers involved with the classes which were to be used for the project.

Table 4.1

Scales selected from PALS (Midgley et al., 2000)

Scale	Description	No. of items
Teacher Mastery Goal	Students' perceptions that their teacher emphasises engaging in academic work in order to develop competence	5
Teacher Performance-Approach Goal	Students' perceptions that their teacher emphasises engaging in academic work in order to demonstrate competence	3
Teacher Performance-Avoid Goal	Students' perceptions that their teacher focuses on engaging in academic work in order to avoid the demonstration of incompetence	4
Academic Efficacy	Students' perceptions of their competence to do their class work	5

4.3.4 The Classroom Instrument

The instrument for the classroom investigation consisted of two sections, one containing 35 items for the classroom environment and one containing 17 items for the outcome scales. It was necessary to adjust it for teacher and learning support staff use. This was a straight forward process of changing the wording of the items so that it accommodated the teachers rather than the students as respondents. For example, the student form "The teacher moves around the class to talk with me" became "I move around the class to talk to students" for the teacher form. The five items for the student academic efficacy were not included in the teachers' instrument and accordingly it consisted of 47 items.

4.3.5 Validation of Classroom Instrument

Since all the items of the instrument for the classroom investigation have been subject to extensive testing and validation in their original construction, a trial of the instrument was not considered necessary. Therefore, validation data for the classroom instrument was generated for the main study only with responses from 152 students and 12 staff. The data from the

students for the classroom environment were subjected to factor and item analyses. Principal components factor analysis (with varimax rotation) using the individual as the unit of analysis extracted seven factors with eigenvalues above unity which accounted for 63.5% of the variance, thus confirming the a priori scales of the instrument (see Table 4.2).

Table 4.2

Explanatory factor analysis results for seven-factor varimax rotation for the classroom environment instrument using main study data (n = 152 students)

Item	Equity	Student Cohesiveness	Investigation	Task Orientation	Involvement	Cooperation	Teacher Support
1		.72					
2		.69					
3		.60					
4		.30					.51
5		.67					
6							.74
7							.54
8							.52
9	.44						.40
10	.48						.33
11					.64		
12					.76		
13					.67		
14				.51	.44		
15			.52		.40		
16				.48			
17				.53			
18				.56			
19				.70			
20				.74			
21			.72				
22			.72				
23			.75				
24			.74				
25			.51				
26		.55				.40	
27						.77	
28						.80	
29		.49				.53	
30						.50	
31	.79						
32	.78						
33	.77						
34	.82						
35	.76						

Table 4.2 shows that 33 of the 35 items had factor loadings of at least 0.4 with their a priori scales. Items 4 and 10 had loadings of 0.30 and 0.33. Apart from items 4, 9, 10, 14, 15, 26 and 29, the remaining 28 items had loadings of less than 0.4 with other scales in the a priori structure. Overall, the factor analysis supported the a priori instrument structure.

Estimates of the internal consistency of all scales of the classroom instrument were calculated using Cronbach's alpha coefficient. Since the numbers of subjects involved in this project was relatively small, only the individual was used as the unit of analysis. Alpha coefficients for each scale of the classroom instrument for students, teachers and learning support personnel were calculated. Two scales, Task Orientation and Teacher Mastery Goal, had alpha coefficients based on the teachers' data considered too low for adequate consistency. By removing one item from the Task Orientation scale and two items from the Teacher Mastery Goal, the alpha coefficient was improved to an acceptable level. This is shown in Table 4.3. All alpha coefficients of the 11 scales of the student form and the 10 scales of the teacher form of the classroom instrument for the students and teachers are displayed in Table 4.4. Further calculations were performed on the student data to provide information on the skewness and kurtosis of each of the scales. (See Table 4.4).

Table 4.3

Table of modification of items used for classroom instrument scales

Scale	Items used	Cronbach alpha for teachers	Cronbach alpha for students
Task orientation	16, 17, 18, 19, 20	.53	.80
	16, 17, 19, 20	.68	.77
Teacher mastery goal	36, 37, 38, 39, 40	.26	.84
	36, 37, 38	.69	.73

Using student data, Cronbach alpha coefficients for the classroom environment scales range from a low of 0.74 for Student Cohesiveness scale to a high of 0.87 for Equity scale. Mean scores ranged from 14.81 (*SD* = 3.18) for Task Orientation to 18.56 (*SD* = 3.28) for Student Cohesiveness. Skewness and kurtosis statistics were computed with combined data from students and teachers. The Investigation scale showed the lowest skewness while there is some suggestion of the *ceiling effect* in the other scales. All the scales, except for Investigation, had significant skewness. There was a small negative kurtosis for the Teacher Support scale (-0.04) and all the other scales showing positive kurtosis with the maximum of 0.49 for the Task Orientation scale. Cronbach alpha coefficients based on staff ranged from 0.65 for Student Cohesiveness to 0.87 for Equity. Scale means ranged from 13.08 (*SD* = 2.15) for Task Orientation to 22.64 (*SD* = 1.80) for Teacher Support.

Table 4.4

Internal consistency (alpha reliability) for the classroom environment instrument for students and teachers (*N* =152 students, 12 teachers and learning support staff combined)

WIHIC Scales	Description of the Scale	No. items	Cronbach alpha		Mean		Standard Deviation		Skewness	Kurtosis
Classroom Environment			Student	Teacher	Student	Teacher	Student	Teacher		
Student Cohesiveness	Students know, help, and support each other	5	.74	.65	18.56	18.09	3.28	2.27	-.48*	.27
Teacher Support	Teacher helps, befriends, trusts, and shows interest in students	5	.84	.69	17.46	22.64	4.13	1.80	-.42*	-.04
Involvement	Students have an interest in and participate in discussions and enjoy the class	5	.78	.79	16.34	18.25	3.89	3.08	-.37*	.24
Task Orientation	Importance of completing activities and staying on tasks	4	.77	.68	14.81	13.08	3.18	2.15	-.60*	.49
Investigation	Skills and processes of inquiry in problem solving and investigation	5	.83	.81	15.76	16.33	4.01	3.28	-.15	.32
Cooperation	Students cooperate with each other on tasks	5	.78	.83	18.21	17.67	3.80	2.54	-.62*	.48
Equity	Students are treated equally by the teacher	5	.87	.87	17.17	21.25	4.75	2.45	.69*	.24
Outcome Scales										
Teacher Mastery Goal	Emphasis is placed on the student engaging in academic work in order to develop competence	3	.74	.69	11.11	13.42	2.77	3.00	.79*	.42
Teacher Performance Approach Goal	Teacher emphasises engaging in academic work in order to demonstrate competence relative to others	3	.61	.77	10.04	8.50	2.60	2.39	-.11	-.26
Teacher Performance Avoidance Goal	Teacher emphasises engaging in academic work in order to avoid the demonstration of incompetence	4	.76	.87	12.72	9.25	3.35	3.93	-.27	-.15
Academic Efficacy	Students' perception of competence in the classroom	5	.86	-	18.28	-	4.47	-	-.87*	.38

Note: Skewness and Kurtosis statistics are based on all the respondents. Only the students responded to Academic Efficacy. *$p < .05$

Based on student data, Cronbach alpha coefficients for the outcome scales ranged from 0.61 for Teacher Performance Approach Goal to 0.86 for Academic Efficacy. Scale means ranged from 10.04 (*SD* = 2.60) for Teacher Performance Approach Goal to 18.28 (*SD* = 4.47) for Academic Efficacy. Skewness for the Outcome scales ranged from .79 to -0.87. Teacher Mastery Goal and Academic Efficacy had significant skewness (.79 and -.87 respectively). Kurtosis for the four scales ranged from -0.15 for Teacher Performance Avoidance Goal to 0.42 for Teacher Mastery Goal and these were not significant.

4.4 DEVELOPMENT AND VALIDATION OF THE SCHOOL ENVIRONMENT INSTRUMENT

This section reports the specific aspects of the development and validation of the school environment instrument. The report follows the five steps of the development and validation framework discussed in Section 4.2.2. The final instruments produced by this process were a 68-item questionnaire with nine scales for staff and a 25-item questionnaire with three scales for parents.

4.4.1 School Environment: Literature and Identification of Appropriate Scales from Literature

Chapter 2 of this thesis provides information on the various points of focus of this research: school environment, classroom environment, Catholic school, inclusive school, and previous research. All these points need to be accounted for in the construction of the instrument to investigate the school environment of a small Catholic secondary inclusive school.

The literature on school environment demonstrates that the categories proposed by Moos (Relationship, Personal Development, and System Maintenance and System Change) for measuring any human environment, have been used in the development of several instruments to measure school environment. Following the same process for the development of the classroom environment in Section 4.3, it was proposed employing existing school environment instruments. The School-level Environment Questionnaire (SLEQ) (see Section 2.1.2) was developed using six development criteria: consistency with the literature, coverage of Moos's general categories, salience to practising teachers, specific relevance to schools, minimal overlap with classroom environment and economy. It was developed for Australian

schools and it eliminated some of the weaknesses of previous instruments. The SLEQ was used by Dorman (1994) to create the Catholic School Environment Questionnaire (CSEQ) and Adams and Adams (2000) to create the Special School Level Environment Questionnaire (SSLEQ) (see Section 2.1.2). In the present study it was decided to use both the CSEQ and the SSLEQ instruments to guide the development of this present instrument. The scales used for these two instruments are show in Table 4.5. There is some inconsistency in the classification of the Empowerment scale in that Dorman had placed it in the Relationship category but Adams categorised it as a System Maintenance and System Change scale.

Literature on Catholic schools raises many issues concerning the environment of schools and these have to be considered when investigating a Catholic school environment (see Section 2.2). Using Moos's schema to group the concepts discussed in the literature review, the following dimensions were considered indicative of the environment in a Catholic school:

- Relationships: Empowerment, Student support, Affiliation, Special Purpose and Holism
- Personal Development: Professional interest
- System Maintenance and System Change: Mission Consensus, Resource Adequacy and Work Pressure.

These scales, defined in Table 4.5, capture the main themes of the official documents on Catholic schools. While the scale names used here are not the same as the terms used in official Church literature, their meanings are explicitly employed in these documents. It would be appropriate to use these scales in the present research. The mission of a Catholic school is stressed throughout the documents and it permeates the scales described in Table 4.5. The way that staff appreciates the school mission will have a big impact on the school environment, as it is this appreciation that makes the school 'Catholic'. Special Purpose and Holism are directly linked to the educational aims of a Catholic school and need to be included even though not all Catholic schools are explicitly inclusive.

The literature on inclusion of special needs students into regular schools also brings many issues to the fore that need to be taken into account by schools that practise inclusion (Section 2.4). The listing of attributes for an inclusive school is a further indication of aspects that need to be considered. These attributes are covered by the scales listed above that describe the environment of a Catholic school. For example, Student Support needs to be in the instrument as there is considerable stress placed on teachers when there are many special needs students in the classrooms. This stress arises mainly form the disciplinary needs of many students who

require support from teachers and learning support personnel to cope with general school life. Teachers also need the support of the administration team of the school and fellow teachers as a team effort is required from all staff to educate the children. This support has an impact on the whole school environment.

Table 4.5

Scales used in Catholic School Environment Questionnaire (CSEQ) and Special School Environment Questionnaire (SSLEQ)

CSEQ Scales	SSLEQ Scales	Description	Moos's schema
Empowerment	Empowerment	The extent to which teachers are empowered and encouraged to be involved in decision making process	R, S
Student support		There is good rapport between teachers and students and students behave in a responsible manner	R
Affiliation		Teachers can obtain assistance, advice and encouragement and are made to feel accepted by colleagues	R
Professional interest	Professional interest	Teachers discuss professional matters and seek further professional development	P
Mission consensus		The extent to which consensus exists within staff with regard to the mission of the school	S
Resource adequacy	Resource adequacy	Support personnel, facilities, equipment and resources are suitable and adequate	S
Work pressure	Work pressure	The extent to which work pressure dominates the school environment	S
	Special purpose	The extent to which the staff see the goals and purpose of the school in relation to students with special needs	R
	Holism	The extent to which the school is involved in the holistic education of the students, including the provision of other professionals	R
	Individualisation	The extent to which the school identifies and meets the student individual needs	R

R: Relationship P: Personal Development S:System Maintenance and System Change
(Adams & Adams, 2000; Dorman, 1994)

4.4.2 School Environment: Stakeholder perceptions

As indicated earlier in this chapter, informal interviews were conducted with a small sample of personnel who had a stake in the future of the school. Six parents were informed of the research project to be conducted at the school during parent/teacher interviews and permission was asked of them to be involved in answering some questions. The main question was "Why did you choose this school for the education of your child?" Answers to this question led to a

very brief discussion of the school environment and gave information on issues the parents considered important.

Evidence from these discussions supported the idea that parents found the school to be unique in its application of education to the special needs students enrolled in its care. As the following interview excerpts show, the fact that the school was a small school was emphasised as an important factor by a number of parents.

Parent 1. The school is not a special school and it caters for the needs of all the students. We spent two years looking for a school for our child and we wanted a small school and a Catholic school.

Parent 2. It is a small school, has small classes, has more teacher contact and emphasises the basics. We have moved house a number of times and have always made sure there was transport for our son to come to this school. We let him know in Year 3 that he would be going to this school.

The importance of relationships was a theme also mentioned by two of the parents of this small group.

Parent 3. It is all about care….everyone cares for all the students.

Parent 4. It is all about relationships….student-teacher, office-parent. We have been impressed with the way the school operates. There is a lack of bullying and everyone is treated the same, like they are mainstream students.

Other comments included:

Parent 5. The dignity of each person is recognised and easily seen.

Parent 6. The school fitted the student's needs and is not a special school.

(Appendix A)

From the comments of these parents, it was clear that they considered the school to have a special purpose which was suitable for the needs of their children. They were very sure that it was not a special school and they did not want to send their children to a special school. Further, the mission of the school seemed fairly clear to them and they thought the teachers and other staff were supportive of this mission. In addition, the parents were not too concerned about the academic success of their students "as long as he is doing his best" (Parent 3). It was important that they saw the children receiving all the educational input that could be expected from a regular mainstream school. The holistic nature of the education at the school was important to parents.

Before the staff of the school was involved in the development of the school environment instrument, it was decided to select tentative scales for the three dimensions and their associated items. This would allow the staff to have an overview of the instrument and to add, or subtract scales, as they considered suitable for the instrument. The scales selected for the development were:

- Relationship dimension: Empowerment, Student Support, Affiliation, Special Purpose, Holism
- Personal development: Professional Interest
- System maintenance and system change: Mission Consensus, Resource Adequacy, Work Pressure.

Each of the teachers consulted thought the scales gave a good indication of the school environment for this particular school and items from CSEQ were used or modified to form a context specific instrument. Items from SSLEQ were unavailable and items for Special Purpose and Holism were constructed by the researcher and teachers. These items are shown in Table 4.6. There were 78 items at the end of this consultation process.

4.4.3 School Environment: Identification of Extra Scales and Appropriate Items

The principal of the school was now consulted. He had been informed of this instrument development. As a result of his suggestions and advice from experts the number of items was reduced to 68. The Individualisation scale which was used in SSLEQ was thought to be more concerned with a special school and, consequently, not appropriate for this school. There were no additional scales. Table 4.7 shows the scales and the number of items used for each scale. Both positive and negative (reverse scored) items were prepared. Responses were recorded using a five-point format (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree). Complete sets of the items are shown in Appendix D.

Since parents of students at the school were involved in this research, it was considered inappropriate to ask them to respond to all items in the instrument as they would not be well informed on some scales. The scales deemed to be most suitable for the parents were Holism, Special Purpose and Mission Consensus. Thus, the instrument for the parents consisted of 25 items which were the same items of these scales used in the teacher form of the school environment instrument.

Table 4.6

Items constructed for holism and special purpose scales

Holism	Special Purpose
Parents are encouraged to be involved in the school.	The school caters well for students with special needs.
Other professionals, including speech and occupational therapists, are involved in the school.	The school needs to be more attentive to the needs of all the students.
There is insufficient involvement of the other educational therapists in the school.	The school is different to other schools in the way it educates its students.
The school gives the students a well rounded education.	The school does not put enough emphasis on the academic work of the students.
More options, such as music and drama, need to be provided for the students at this school.	There are too many students with special educational needs at this school.
Members of the outside community are encouraged to be involved in the school	Very few students are left behind academically in their studies.
There should be more involvement of the school with the outside community	There needs to be more teachers with training in special education at the school.
Religion is considered an important subject in this school.	Because of the vocational direction of the curriculum, the school prepares students well for the workforce.
The study of religion is not necessary for the students at this school.	
Students obtain adequate training in technology for the future.	
School spirit and school pride is fostered adequately in the school.	

4.4.4 Validation of School Environment Instrument

It was decided not to trial the school environment instrument as many of the items had been previously used in other instruments. However, the items for Holism and Special Purpose were given to a small group of staff to examine before they were used and these were acknowledged as appropriate for this purpose. Therefore, validation data for the classroom environment instrument was generated for the main study only.

In the main study, 41 staff and 40 parents were involved in responding to the instrument. Parents were only asked to respond to items on three scales: Mission Consensus, Holism and Special Purpose. The data were subjected to item analysis. Factor analysis was not carried out since the total number of respondents was too small.

Table 4.7

Scales and number of items used in the instrument

Scale	No. of items	No. of reverse scored items	Moos's schema
Empowerment	6	2	R
Student Support	7	2	R
Affiliation	7	2	R
Special Purpose	8	4	R
Holism	11	3	R
Professional Interest	6	1	P
Mission Consensus	8	1	S
Resource Adequacy	7	1	S
Work Pressure	7	3	S

R: Relationship, P: Personal Development, S:System Maintenance and System Change

Refinement decisions

Estimates of the internal consistency of the nine scales of the school environment were calculated using Cronbach alpha coefficient for the data collected (see Table 4.8). Since the numbers of subjects involved in this project is relatively small, only the individual was used as the unit of analysis. On examination, several scales had unacceptable alpha coefficients. A number of items were removed from the scales to improve the internal consistency. Coefficients for original and refined scales are reported in Table 4.8. The alpha coefficients for the refined scales ranged from 0.63 for Student Support scale to 0.87 for Affiliation scale.

Table 4.8

Table of modification of items used for school environment scales and Cronbach alpha coefficient for scales

Scale	Original instrument items	Revised instrument items	Original alpha	Revised alpha
Mission Consensus	1, 2, 10, 19, 28, 37, 46, 55	1, 10, 19, 28, 46, 55	.66	.82
Holism	8, 17, 26, 35, 44, 53, 62, 64, 66, 67, 68	8, 17, 26, 35, 44, 53, 64, 66, 67, 68	.69	.80
Special Purpose	9,18, 27, 36, 45, 54, 63, 65	9,18, 36, 54, 63, 65	.64	.71
Student Support	3, 12, 21, 30, 39, 48, 57	3, 12, 39, 48, 57	.54	.62
Affiliation	4, 13, 22, 31, 40, 49, 58	13, 22, 31, 40, 49, 58	.73	.87
Professional Interest	5, 14, 23, 32, 41, 50, 59	5, 14, 23, 32, 41, 50, 59	.67	.67
Resource Adequacy	6, 15, 24, 33, 42, 51, 60	6, 15, 24, 33, 51, 60	.79	.83
Work Pressure	7, 16, 25, 34, 43, 52, 61	7, 16, 34, 43, 52, 61	.49	.61
Empowerment	11, 20, 29, 38, 47, 56	11, 20, 29, 38, 47, 56	.68	.68

Further calculations were performed on the data to provide information on the mean, standard deviation, skewness and kurtosis of each of the scales. The results are shown in Table 4.9. Skewness had a range from -1.05 for Empowerment to 0.42 for Student Support with significant results for Affiliation, Resource Adequacy and Empowerment. Kurtosis statistics ranged from -0.79 for Mission Consensus to 2.19 for Empowerment and this was significant for Empowerment.

Table 4.9
Scales of the school environment questionnaire showing skewness and kurtosis

Scale	Skewness	Kurtosis	Mean	SD
Mission Consensus	-.24	-.79	23.91	3.74
Holism	.04	-.38	37.27	5.84
Special Purpose	.40	-.28	20.97	3.68
Student Support	.42	-.36	20.34	2.36
Affiliation	-.86*	.47	22.49	4.42
Professional Interest	.04	-.03	20.13	2.86
Resource Adequacy	-.90*	1.19	21.80	4.00
Work Pressure	-.54	.17	24.59	3.13
Empowerment	-1.05*	2.19*	19.95	3.58

*$p < .05$

4.5 CHAPTER SUMMARY

This chapter has detailed the specific steps undertaken in the development of instruments to assess the classroom and school environments in a small, inclusive, Catholic, secondary school. Four instrument development criteria were described in Section 4.2.1 and utilised through the instrument development and validation procedure (Section 4.2.2). This procedure began with literature of classroom and school environment, Catholic schools and special education which was reviewed in Chapter 2 of this thesis. Perceptions of stakeholders were obtained by informal interviews conducted by the researcher. Dimensions of the classroom and school environments were identified and existing classroom and school environment instruments were examined and appropriate scales selected.

For the classroom environment instrument, the WIHIC (Fraser et al., 1996) was chosen as the source of scales and items which were appropriate for the school involved in the research and additional items for outcome scales of Teacher Mastery Goals, Teacher Performance-Approach Goals, Teacher Performance-Avoidance Goals and student Academic Efficacy were selected from Manual for Patterns of Adaptive Learning Scales (Midgley et al., 2000). This development process led to the construction of an instrument containing 52 items for students and 47 for the teaching staff which assess 11 and 10 scales respectively. The scales were: Student Cohesiveness, Teacher Support, Involvement, Task Orientation, Investigation, Cooperation, Equity, Teacher Mastery Goal, Teacher Performance-Approach Goal, Teacher Performance-Avoidance Goal and one extra for the students, Academic Efficacy. A trial version of the instrument was not considered necessary and data were collected from 152 students and 12 teaching staff for the main study. These data were subjected to factor and item analyses which supported the a priori instrument structure. Internal reliability statistics revealed the scales to be internally consistent. Two scales were modified by deleting one item from each these two scales.

The 68-item instrument for assessing the school environment was based largely on two pre-existing instruments, CSEQ and SSLEQ. The perceptions of stakeholders were influential in selecting scales and items from these two instruments. Further items were written by the researcher and some staff members. The final nine scales selected were: Mission Consensus, Holism, Special Purpose, Student Support, Affiliation, Professional Interest, Resource Adequacy, Work Pressure and Empowerment. A trial study was not conducted and the data

collected from the study were analysed for internal consistency. Some scale refinement resulted in items in some of the scales being deleted and it was found that the scales had general reliability.

The final form of each instrument used a five - point Likert format for the responses: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree and Strongly Disagree. Both instruments meet the four development criteria outlined at the beginning of this chapter: consistency with the literature, coverage of Moos's three general categories (Relationship, Personal Development and System Maintenance and System Change), salience to stakeholders, and economy of administration and scoring.

Validation data attest to the sound structural characteristics of the two instruments and provide a basis for subsequent data analyses which are reported in Chapter 5 of this thesis. The development of these instruments has been based on pre-existing instruments which have been successfully used in other schools and this validation process enhances their usefulness for further research involving inclusive Catholic secondary schools.

CHAPTER 5

RESULTS OF DATA ANALYSIS

5.1 INTRODUCTION

The purpose of this chapter is to report on the use of the classroom and school environment instruments developed for this study. The validity of these instruments was described in the last chapter and the data reported attested to this validity. These instruments were used in a small, inclusive, Catholic, secondary school to facilitate the answering of the Research Questions, the determinant questions 1.1-1.6, and the relationship questions 2.1- 2.4. The classroom instrument data were collected from 152 students at the one school, with the opportunity given to all the students to participate, and 12 staff associated with the English classes in which the instruments were administered. The school environment data were obtained from 24 teachers, 17 learning support staff and 40 parents. Details of the specific inclusion of these groups are given in Chapter 4 (see Section 4.4.3).

The data analysis procedure used to compare group means was multivariate analysis of variance (MANOVA). In general, the significance level adopted for all inferential tests of significance was .05. Provided that the overall multivariate test was significant, univariate *F* tests were used for individual scales. As outlined in Chapter 3, this approach reduced the overall Type 1 error rate that would have been associated with performing a series of univariate tests at the outset.

Where appropriate, an effect size, *Cohen's d*, is reported. Effect size refers to the extent to which groups in the population differ on the dependent variable (Howell, 1999). The difference between the group means as a fraction of the full sample standard deviation was used as a convenient index. Graphs of the sample data illustrate the results.

Apart from this introductory section, there are four main sections to this Chapter. Section 5.2 provides the details of the research questions to be answered in this part of the study. This section clearly identifies which questions investigated the determinants of the school environment and which questions investigated the determinants of the classroom environment and the outcomes of the teachers' goals. Sections 5.3 and 5.4 report findings of the school and

classroom environment components of the study. Section 5.5 provides the results of the correlational analysis of associations between classroom environment and the outcome scales. Section 5.6 details the development of a model that relates student perceptions of classroom environment to student perceptions of Teacher Performance Goals and Academic Efficacy.

5.2 RESEARCH QUESTIONS ANSWERED IN THIS CHAPTER

The research questions answered with quantitative data were:

1.2a What differences exist between teacher and parent perceptions of the school environment of an inclusive Catholic school?

1.2b What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?

1.3 To what extent do teachers' perceptions of the school environment differ according to gender?

1.4a To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?

1.4b To what extent do the student perceptions of the classroom learning environment differ according to Junior or Senior level of school?

1.5 What differences exist between student and teacher perceptions of the classroom environment of an inclusive Catholic school?

2.1 What relationship exists between the classroom environment and student self efficacy?

2.2 What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?

2.3 What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?

3.1 Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?

Three questions (1.2a, 1.2b, 1.3) involved school environment; three questions (1.4a, 1.4b, 1.5) involved classroom environment; one question (2.1) involved classroom environment and student academic self-efficacy; two questions (2.2, 2.3) involved classroom environment and teacher goals; and one question (3) involved the development of a model relating student perceptions of classroom environment and outcome scales.

5.3 ANALYSIS OF SCHOOL ENVIRONMENT DATA

This section reports the investigation of Questions 1.2a, 1.2b and 1.3 concerning the differences in perception of school environment among the three groups who responded to the instrument. There were 18 teachers, 12 learning support staff and 40 parents who took part in this project. Parents were asked to respond only to items of three scales from the school environment instrument and data are therefore only compared across these scales. Teachers and learning support staff completed the whole instrument and all scales were used in the analysis.

5.3.1 School Environment Compared Among Teachers and Parents

Question 1.2a What differences exist between teacher and parent perceptions of the school environment of an inclusive Catholic school?

To investigate this question, a MANOVA with the three common scales of the school environment instrument constituting the dependent variable and the set of independent variable of the respondents was performed. The three scales were Mission Consensus, Holism and Special Purpose. Because the differences in the teacher/parent analysis was significant (p <.002) in the multivariate analysis, univariate F tests were interpreted. These tests showed that parents and teachers differed significantly on each of these scales (p < .05). Effects sizes in terms of Cohen's d for each of the scales indicated a moderate effect size (.3) for Special Purpose and very large effect size for Mission Consensus (1.04) and Holism (1.16). The scale means for parents and teachers are graphed in Figure 5.1 and indicate parents perceived the school environment with higher values for all three scales.

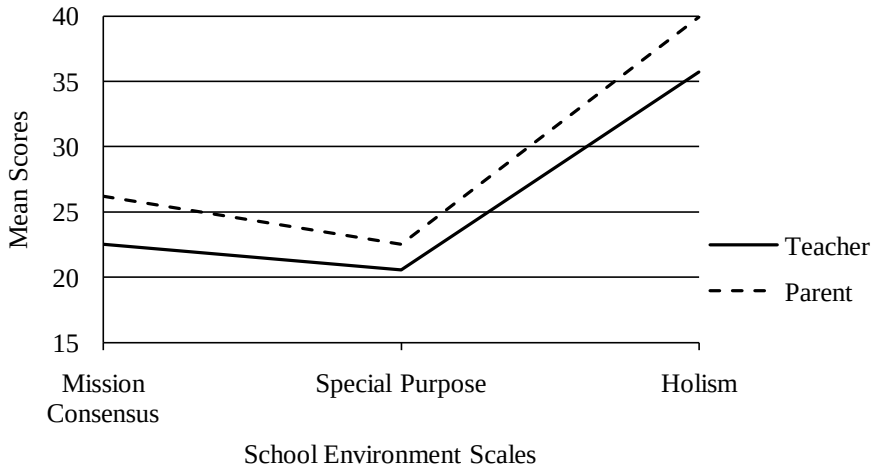

Figure 5.1. Mean scores for parent and teachers on the three scales of the school environment

5.3.2 School Environment Compared Among Teachers and Learning Support Staff

Question 1.2b What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?

To investigate this question, a MANOVA was performed with the nine scales of the school environment instrument constituting the dependent variables and the set of independent variables of respondents consisting of learning support staff and teachers. As a result of the multivariate analysis, there were no statistical significant differences in the combined scales. An examination of the univariate F tests of the scales revealed significance of $p < .05$ for the scales of Affiliation and Empowerment. The calculated effect sizes for these scales were .9 and .8 respectively, both considered to be large. A graph of the scale mean scores of the school environment of the two groups is illustrated in Figure 5.2.

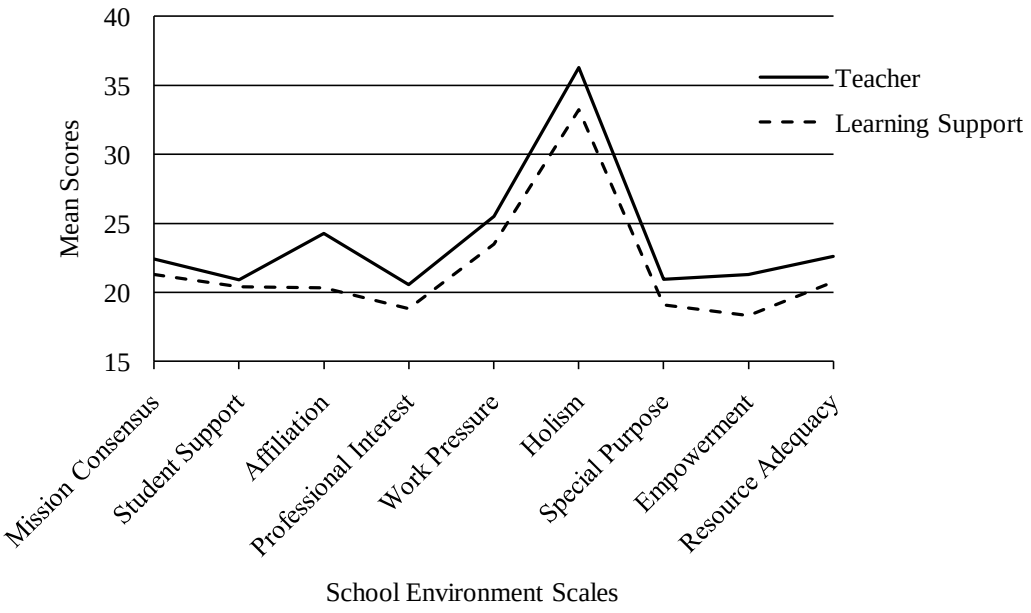

Figure 5.2. Mean scores for teachers and learning support staff for nine school environment scales

5.3.3 School Environment Perceptions According to Gender of Teachers

Question 1.3 To what extent do teachers' perceptions of the school environment differ according to gender?

To investigate this question, a MANOVA with the nine scales of the school environment instrument constituting the dependent variables and the set of independent variables of teachers listed according to gender (7 males and 10 females) was performed. The multivariate analysis showed differences of no statistical significance. A graph of the scale means for the genders is produced in Figure 5.3 showing little variation among the means, except for the Resource Adequacy scale. A univariate *F* test produced a significance of $p < .05$ for this scale and the effect size *d* was very large (1.1).

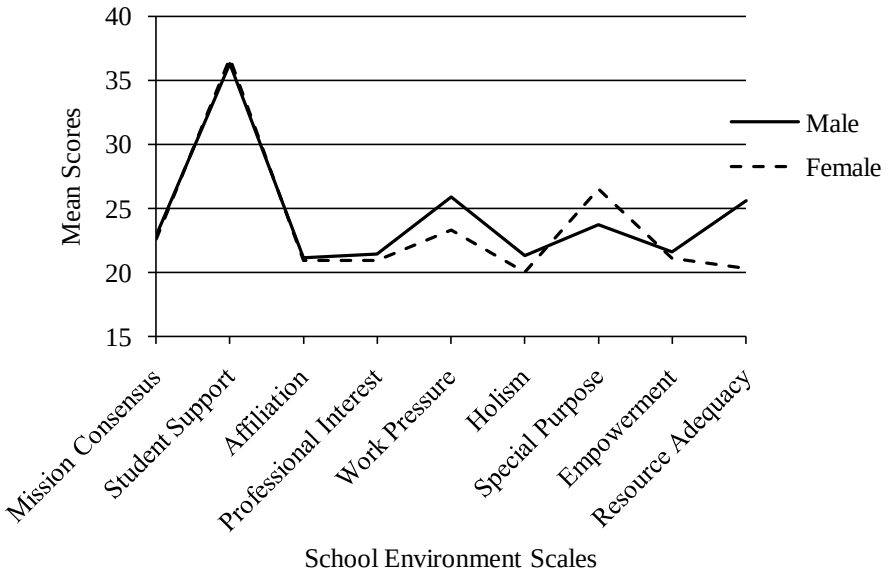

Figure 5.3. Mean scores for the male and female teachers for the nine school environment scales

5.4 ANALYSIS OF CLASSROOM ENVIROMENT DATA

This section reports the investigation of Questions 1.4a, 1.4b and 1.5 concerning the differences in perception of classroom environment among students and teaching staff who responded to the instrument. There were 4 teachers, 7 learning support staff and 152 students who took part in this project. Teachers and learning support are grouped as the teaching staff and completed the same instrument as the students except for items on Academic Efficacy.

5.4.1 The Differences in Perceptions of Students of the Classroom Environment According to Gender, Year Level and Religion

Question 1.4a To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?

To investigate this question a MANOVA with the seven scales of the classroom environment instrument constituting the dependent variables and the set of independent variables of gender, year level and religion was performed. The analysis showed no significant difference in the results of the independent variables used. Graphs of the means of the classroom environment scales according to gender, year level and religion and produced in Figures 5.4, 5.5 and 5.6 respectively. Calculations of effect sizes were performed for the year levels for the Student Cohesiveness scale only. The effect size between Year 8 and Year 12 was moderate

(.4) and other effect sizes between the Year levels were large (.6 < *d* < 1) except for the difference between Year 10 and Year 11, which was very large. There was also a very large effect size for Involvement scale between Years 10 and 11. Section 5.4.2 provides a clearer interpretation of the differences of perceptions between the Year Levels. Effect sizes calculated for Religion produce moderate results for: Student Cohesiveness between Catholics and Christians (.3), and between Catholics and Non-Christians (.5); Involvement between Catholics and Christians (.5) and Catholics and Non-Christians (.5); Task Orientation between Catholics and Christians (.4) and Catholics and Non-Christians (.5); Investigation between Christians and Non-Christians (.4).

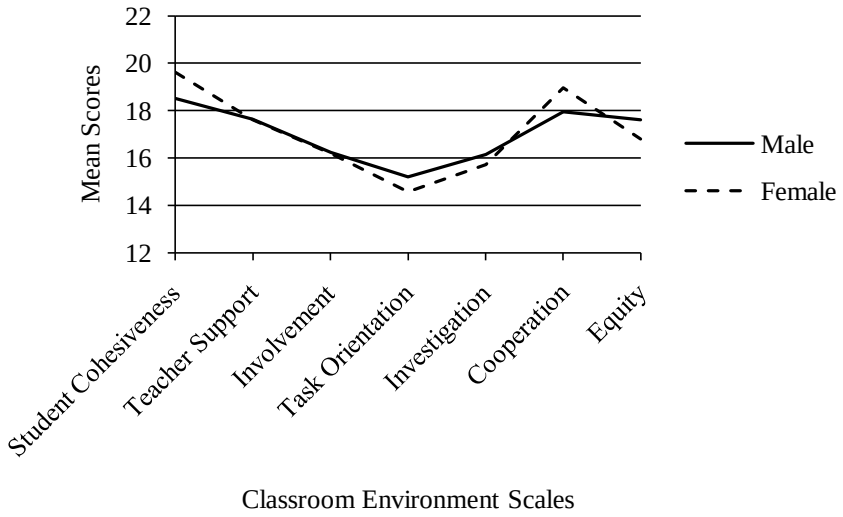

Figure 5.4. Mean scores for students for the seven classroom environment scales according to gender

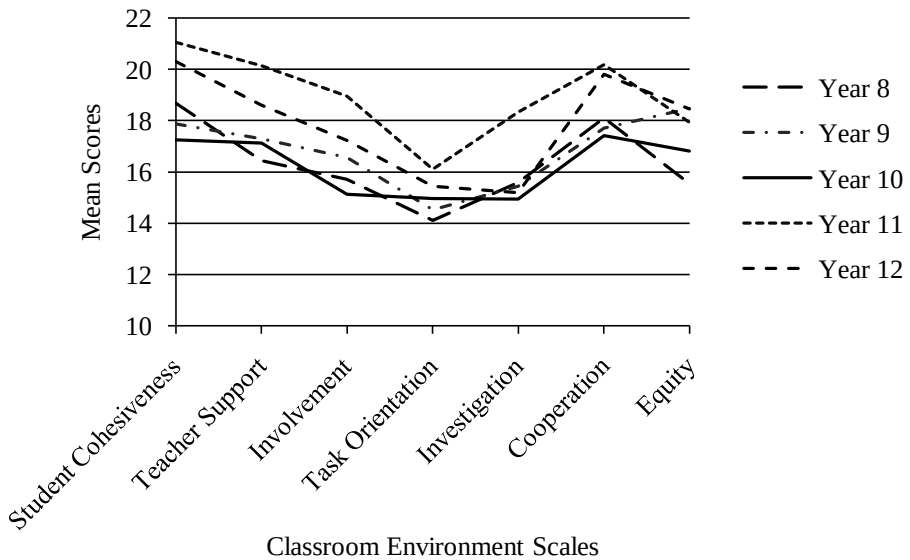

Figure 5.5. Mean scores for students for the seven classroom environment scales according to year level

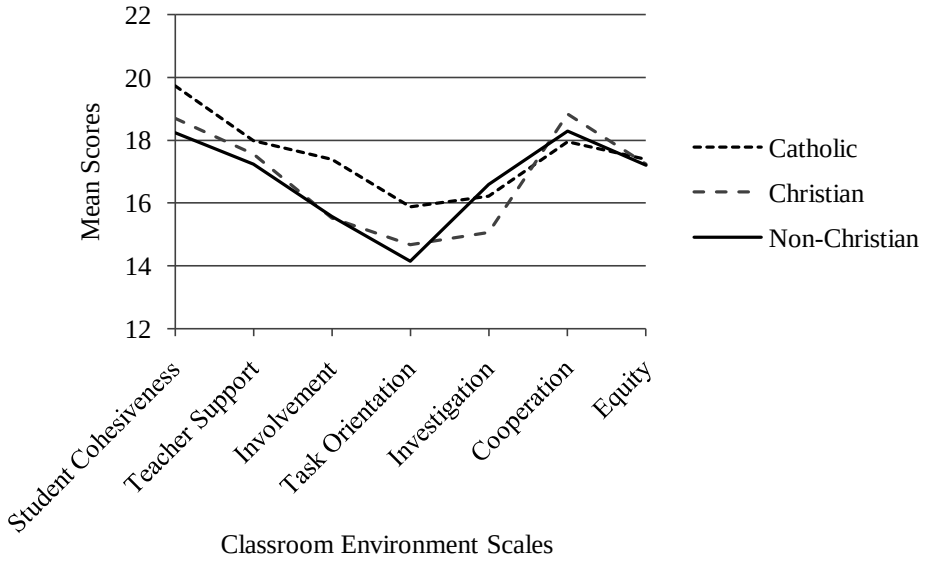

Figure 5.6. Mean scores for students for the seven classroom environment scales according to religion

5.4.2 The Differences in Perceptions of Students of the Classroom Environment According to Junior and Senior Levels

Question 1.4b To what extent do the student perceptions of the classroom learning environment differ according to Junior or Senior level of school?

To investigate this question a MANOVA with the seven scales of the classroom environment instrument constituting the dependent variables and the independent variable of the levels (Junior and Senior) of schooling was performed. The analysis indicated a difference of statistical significance ($p < .002$) between the Junior and Senior perceptions of the classroom environment. Univariate F tests were interpreted for each of the scales. These tests showed that the Juniors and Seniors differed significantly on each of these scales ($p < .05$), except for the Equity scale. Effect sizes in terms of Cohen's d for each of the scales indicated large effect sizes for Student Cohesiveness, Task Orientation and Cooperation and moderate effect sizes for Teacher Support, Involvement and Investigation. There was a small d (.18) for Equity. A graph of the means for each of the scales is produced in Figure 5.7.

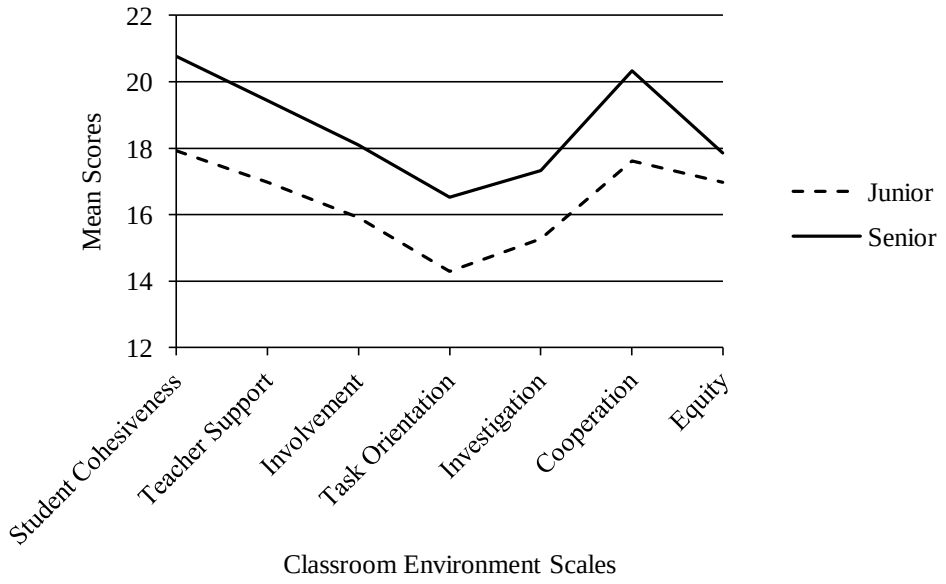

Figure 5.7. Mean scores for Junior and Senior students for the seven classroom environment scales

5.4.3 The Differences in Perceptions of Classroom Environment by Students and Teaching Staff

Question 1.5. What differences exist between student and teacher perceptions of the classroom environment of an inclusive Catholic school?

To investigate this question, a MANOVA with the seven scales of the classroom environment instrument constituting the dependent variables and independent variable of classroom respondents (students and teaching staff) was performed. The multivariate analysis showed differences of statistical significance. Interpretation of univariate *F* tests indicated students and teaching staff differed significantly on two scales, Teacher Support and Equity. Effect sizes in terms of Cohen's *d* for each of the scales indicated a very large effect size (1.3) for Teacher Support and a large effect size (.9) for Equity. A graph illustrating the scale mean scores for the two groups is produced in Figure 5.8.

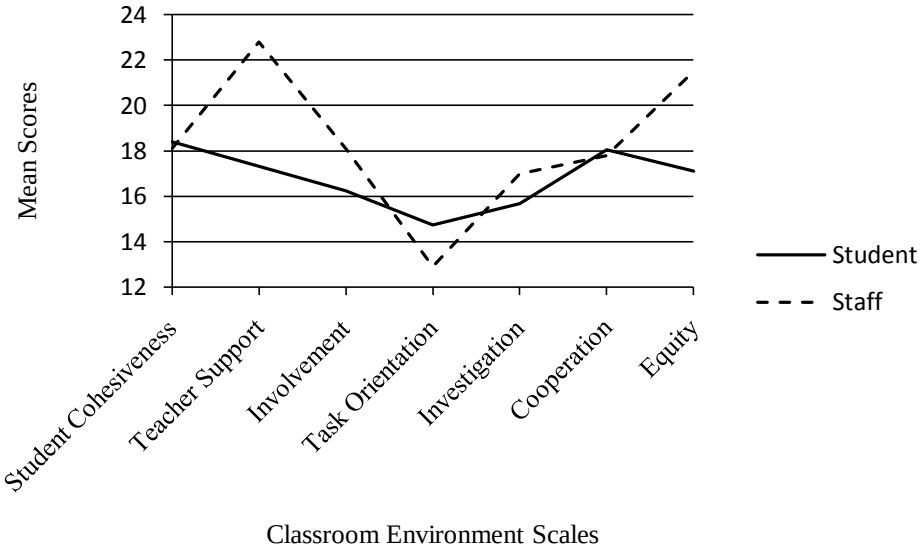

Figure 5.8. Mean scores for the students and teaching staff for the seven classroom environment scales

5.5 THE RESULTS OF CORRELATIONAL ANALYSIS OF ASSOCIATIONS BETWEEN CLASSROOM ENVIRONMENT AND OUTCOME SCALES

This section reports the investigation of Questions 2.1, 2.2 and 2.3 concerning the relationships of the perception of classroom environment among students and the outcome scales. The questions to be answered are:

2.1 What relationship exists between the classroom environment and student self-efficacy?

2.2 What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?

2.3 What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?

The data set for these analyses consisted of 152 students who responded to the classroom instrument which provided data for the classroom environment scales and the outcome scales. A simple correlational analysis was used to investigate the relationship between each classroom environment scale and each outcome scale. Of the 28 simple correlations reported in Table 5.1, 24 were significant at the .01 level and one at the .05 level.

Table 5.1

Pearson Correlation of Classroom Environment Scales and Outcome Scales

	Outcome Scales			
Classroom Environment Scales	Teacher Mastery Goal	Teacher Performance Approach Goal	Teacher Performance Avoidance Goal	Academic Efficacy
Student Cohesiveness	.24(**)	.28(**)	.14	.30(**)
Teacher Support	.61(**)	.25(**)	.39(**)	.34(**)
Involvement	.34(**)	.26(**)	.15	.39(**)
Task Orientation	.54(**)	.33(**)	.29(**)	.63(**)
Investigation	.39(**)	.30(**)	.36(**)	.50(**)
Cooperation	.32(**)	.28(**)	.17(*)	.29(**)
Equity	.61(**)	.08	.33(**)	.39(**)

*$p < .05$, ** $p < .01$

A multiple correlation analysis explored models using classroom environment scales as predictors of the outcome scales. Stepwise multiple regression process (Stevens, 2002) was used and the results of these calculations are reported for the scales in Table 5.2. To help with the interpretation of the results, Table 5.2 also reports the standardised regression coefficients (beta weights) between each outcome scale and each correlated classroom environment scale, and associated *t* test results. For Academic Efficacy scale, two significant predictors were found: Task Orientation (β =.49, $p < .001$) and Investigation (β = .26, $p < .005$). Teacher Mastery Goals had three significant predictors: Equity (β = .35, $p < .001$), Task Orientation (β = .23, $p <$ 005) and Teacher Support (β = .25, $p < .05$). Teacher Performance-Approach Goals had four significant predictors: Task Orientation (β = .30, $p < .005$), Student Cohesiveness (β = .17, $p < .05$), Equity (β = .31, $p < .005$) and Teacher Support (β = .25, $p < .05$). Teacher Performance-Avoidance Goals, had two significant predictors: Teacher Support (β = .27, $p <$ .005) and Investigation (β = .22, $p < .005$). Task Orientation scale is a key predictor for three of the outcome scales Academic Efficacy, Teacher Mastery and Teacher Performance Approach Goals. Other significant predicator scales are Teacher Support, Investigation, Equity and Student Cohesiveness. Another multiple correlation analysis was carried out using the *Forward* (Enter) method (Stevens, 2002) and these results are reported in of. From these results the Task Orientation Scale is the key predicator scale and other significant predicator scales are Teacher Support, Investigation and Equity. The Enter method replaces the Student Cohesiveness scale with Cooperation.

Table 5.2

Results of Stepwise Multiple Regression of Classroom Scales as Predictors of Outcome Scales (N = 152)

Outcome Variable	Predictor Variable	R	β	t
Academic Efficacy	Task Orientation	.67	.49	6.23***
	Investigation		.26	3.24**
Teacher Mastery Goals	Equity	.70	.35	4.03***
	Task Orientation		.23	2.86**
	Teacher Support		.26	2.83**
Teacher Performance Approach Goals	Task Orientation	.46	.30	2.91**
	Student Cohesiveness		.17	1.92*
	Equity		-.31	-2.91**
	Teacher Support		.25	2.09*
Teacher Performance Avoidance Goals	Teacher Support	.42	.27	2.93**
	Investigation		.22	2.45**

* $p < .05$ ** $p < .005$ ***$p < .001$

Canonical correlation was used to establish the strength of the relationship between the set of correlated classroom environment scales and the set of correlated outcome scales. It is more parsimonious than multiple correlation and overcomes the possible inflated Type 1 error problem in multiple correlation due to relationships among dependent variables (Stevens, 2002). The canonical correlation coefficient (R_c) represents the highest correlation between two transformed variables – one formed by the linear combination of the independent variables, the other by the linear combination of the dependent variables. Additionally, because R_c^2 cannot be used to interpret variance overlap between classroom environment and outcome variables, a redundancy analysis that provides meaningful information on variance overlap was conducted (Tabachnick & Fidell, 2001).

Canonical correlation analysis, reported in Table 5.4, revealed two statistically significant correlations between the sets of classroom environment scales and the set of outcome scales ($p < .001$). Because canonical correlation analysis can be unreliable if the ratio of cases to variable is low (less than 20:1) (Stevens, 2002), it was decided to interpret only the first statistically significant canonical root (R_c = .84). Interpretation of the correlations between the original variables and the canonical variate and the standardised canonical coefficients revealed that higher levels of Task Orientation and to a lesser extent Equity and Investigation were associated with higher levels of Teacher Mastery Goals and Academic Efficacy. A

redundancy analysis indicated that, for this first canonical root, the seven classroom environment scales explained 44.50% of variance in the classroom environment variate.

Table 5.3

Results of Enter Multiple Regression (N = 152)

Outcome Variable	Predictor Variable	R	β	t
Academic Efficacy	Student Cohesiveness	.70	-.03	-.35
	Teacher Support		-.25	-2.45*
	Involvement		.12	1.31
	Task Orientation		.51	5.65***
	Investigation		.24	2.93**
	Cooperation		.12	1.39
	Equity		.14	1.60
Teacher Mastery Goals	Student Cohesiveness	.72	-.12	-1.37
	Teacher Support		.23	2.41*
	Involvement		-.00	-.05
	Task Orientation		.23	2.62*
	Investigation		.06	.78
	Cooperation		.15	1.91*
	Equity		.33	3.79***
Teacher Performance Approach Goals	Student Cohesiveness	.48	.10	.97
	Teacher Support		.20	1.65
	Involvement		.03	.26
	Task Orientation		.26	2.38*
	Investigation		.10	.97
	Cooperation		.10	1.02
	Equity		-.32	-2.98**
Teacher Performance Avoidance Goals	Student Cohesiveness	.44	-.05	-.47
	Teacher Support		.28	2.16*
	Involvement		-.15	-1.35
	Task Orientation		.06	.53
	Investigation		.25	2.42*
	Cooperation		.05	.45
	Equity		.03	.29

*p < .05, **p < .005, ***p < .001

Similarly, 39.80% of variance in the outcomes variate was explained by the four outcome scales. For this first canonical root, the classroom environment variate accounted for 28.20% of the variance in the outcomes scales. Overall, these findings indicate that Task Orientation, Equity and Investigation were key predictors of Teacher Mastery Goals and Academic Efficacy.

Table 5.4

Canonical Correlation Results for Classroom Environment Scales and Outcome Scales (N = 152 students)

Variable	Correlation with Canonical Variate	Standardised Canonical Coefficient
Classroom Environment Scales		
Student Cohesiveness	-.44	.08
Teacher Support	-.72	-.01
Involvement	-.60	-.10
Task Orientation	-.90	-.57
Investigation	-.70	-.24
Cooperation	-.49	-.22
Equity	-.70	-.26
Outcome Scales		
Teacher Mastery Goals	-.79	-.55
Teacher Performance Approach Goals	-.43	-.20
Teacher Performance Avoidance Goals	-.42	-.05
Academic Efficacy	-.79	-.58
	R_c = .84	

$p < .001$

5.6 DEVELOPMENT OF A MODEL

Question 3.1 Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?

To answer this question LISREL analysis was performed.

LISREL Analyses

Values for λ and θ for each scale were computed using Munck's (1979) theory described in Section 3.3.3. From the simple, multiple and canonical correlational results reported above, a postulated model showing the influence of the set of seven classroom environment scales on the four outcome scales was developed. As shown in Figure 5.9, Teacher Support predicted all

four outcome scales but Cooperation did not predict any outcome scales. Academic Efficacy was predicted by five classroom environment scales: Teacher Support, Involvement, Task Orientation, Investigation and Equity.

The LISREL analysis of the postulated model shown in Figure 5.9 revealed a sound fit to the data (see Table 5.5). However, a review of path coefficients revealed two paths for which the coefficients were not statistically significant (viz Cooperation $\rightarrow$Teacher Mastery Goals and Teacher Support $\rightarrow$ Teacher Performance – Approach Goals. These two paths were removed from the model. Additionally, as recommended by the LISREL output, Teacher Performance – Approach Goals and Teacher Performance – Avoidance Goals were allowed to co-vary. Fit indices for this new model (Model 2) are shown in Table 5.5. This model fitted the data better with a statistically significant reduction in χ^2 from 55.34 to 47.50 ($p<.05$). LISREL then recommended that a path from Student Cohesiveness to Teacher Performance – Approach Goals be added. This third model fitted the data even better with a statistically significant reduction in χ^2 from 47.50 to 36.79 ($p<.05$). Fit indices for this final model are shown in the bottom row of Table 5.5.

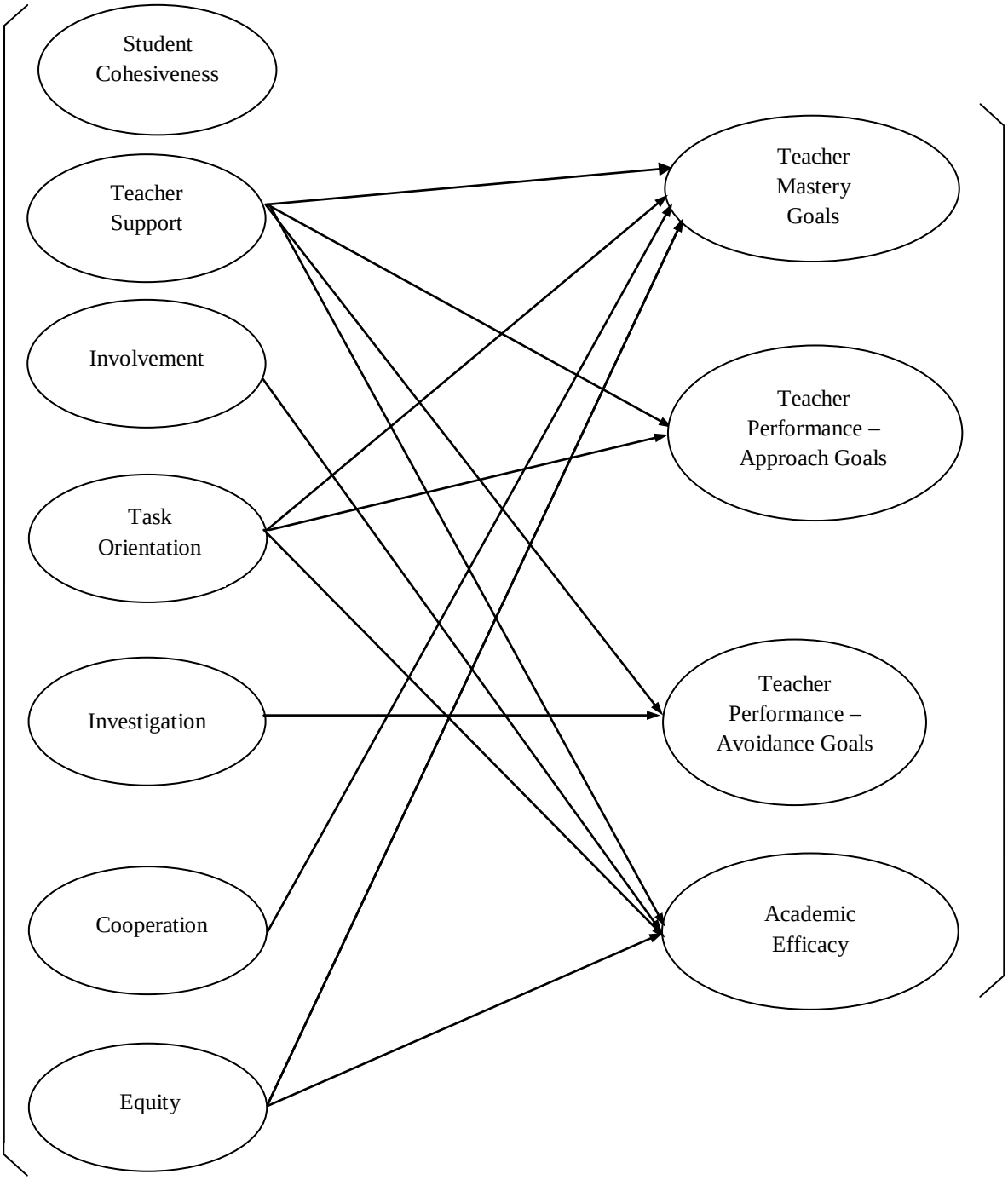

Figure 5.9. Postulated model for four outcome variables (observed variables, fixed paths from observed variables to latent variables and error variances for observed variables

Table 5.5
Summary of specifications and fit statistics for three structural models.

Model	Actions	χ^2	df	RMSEA	TLI	PNFI
1 (Postulated) (see Figure 5.9)	-	55.34	21	.09	.95	.35
2	Path Cooperation →Teacher Mastery Goals removed. Path Teacher Support → Teacher Performance – Approach Goals removed. Error covariance Teacher Performance – Approach Goals ↔ Teacher Performance – Avoidance Goals added.	47.50	22	.08	.96	.37
3 (Final) (see Figure 5.10)	Path Student Cohesiveness → Teacher Performance – Approach Goals added.	36.79	21	.06	.98	.36

Figure 5.10 shows this final model with path coefficients, all of which were statistically significantly different from zero ($p<.05$). While model fit and model comparison indices for this final model were very good (RMSEA of .06 and a TLI of 0.98), the model parsimony was not above the benchmark value of .50 indicating mediocre parsimony in the model (see Table 5.5). Nevertheless, this model should be interpreted as having very good overall fit to the data.

In general, the strength and direction of the statistically significant path coefficients are plausible. For example, Task Orientation was a moderate positive predictor of Teacher Mastery Goals ($\beta = 0.24$) and Teacher Performance – Approach Goals ($\beta = 0.24$) and a strong positive predictor of Academic Efficacy Goals ($\beta = 0.56$). Involvement, Student Cohesiveness, and Investigation were moderately related to Academic Efficacy ($\beta = 0.15$, 0.23, and 0.22 respectively). Teacher Support was a moderate positive predictor of Teacher Mastery Goals ($\beta = 0.19$) and Teacher Performance – Avoidance Goals ($\beta = 0.23$). It is noteworthy that, apart from the effect of Teacher Support on Academic Efficacy ($\beta = -0.24$), all classroom environment scales in the final model had positive effects on all outcome scales. Increased levels of Teacher Support were related to lower levels of Academic Efficacy.

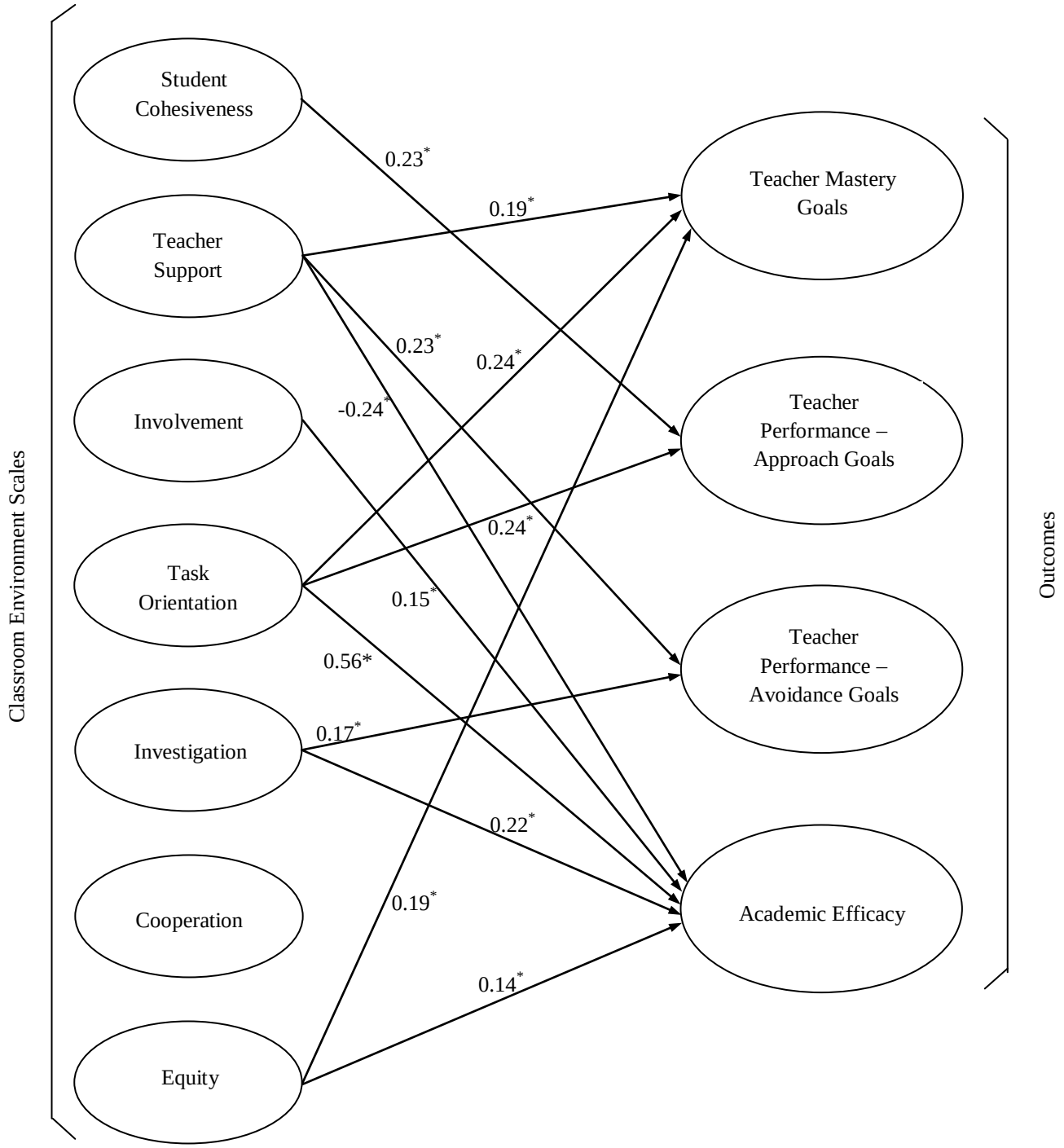

Figure 5.10. Final model for four outcome variables (observed variables, fixed paths from observed variables to latent variables and error variances for observed variables have been omitted) (*p < .05).

5.7 CHAPTER SUMMARY

This chapter has reported analyses of the quantitative data collected in this study. This final section summarises the key findings of the various analyses. Discussion of the quantitative results occurs in Chapter 6.

The school environment data analyses were reported in Section 5.3. In Section 5.3.1 the analyses of the school environment data revealed that the parents and teachers differed significantly on all three scales of Mission Consensus, Holism and Special Purpose. Effect sizes were very large for Mission Consensus and Holism and moderate for Special Purpose. On each of the scales parents scored higher means than teachers. In Section 5.3.2, the report on the analyses of the data of teachers and learning support staff was provided. There were no significant differences as a result of MANOVA and teachers scored higher means on all the scales. An examination of univariate *F* tests revealed significant differences for the scales of Affiliation and Empowerment. Effect sizes for these two scales were large. Section 5.3.3 examined the differences of the perceptions of the teachers according to their gender and no significant differences were found. Only one scale, Resource Adequacy, was reported to have a significant difference with a univariate *F* test and an effect size for this scale was very large.

The classroom environment data were considered in Section 5.4. No significant differences were revealed for gender, year level and religion when a MANOVA was performed. Effect sizes varied from moderate to large for the Year levels on the different scales with a clear distinction between Years 11 and 12 and Years 8, 9 and 10. This was clearly revealed in Section 5.4.2 which investigated the differences between the perceptions of Junior and Senior levels of the school. A MANOVA analysis indicated a significant difference between the Junior and Senior perceptions of the classroom environment. Univariate *F* tests revealed each of the scales, except for Equity, differed significantly. Effect sizes were very large for Student Cohesiveness, Task Orientation and Cooperation and moderate for Teacher Support, Involvement and Investigation.

The multivariate analysis of the differences in perceptions of the classroom environment by students and teaching staff revealed differences of statistical significance. The results of univariate *F* tests revealed significant difference on two scales, Teacher Support and Equity. Effect size for Teacher Support was very large and large for Equity.

Relationships between classroom environment scales and outcome scales were investigated through simple, multiple and canonical correlation analyses (Section 5.5). These analyses indicated some strong relationships, with Academic Efficacy having predicator scales of Task Orientation and Investigation. Teacher Mastery Goals had predicator scales of Teacher Support, Task Orientation and Equity. Teacher Performance - Approach Goals also was observed to have predictor scales of Student Cohesiveness, Teacher Support, Task Orientation and Equity but these relationships were not as strong and Teacher Performance - Avoidance Goal had predictor scales of Teacher Support and Investigation and these were not strong predictors. The canonical correlation suggested that two outcome scales Academic Efficacy and Teacher Mastery Goals have three key predictors: Task Orientation, Equity and Investigation.

The final component of this results chapter (Section 5.6) explored a model that relates students' perceptions of classroom environment to students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy. Structural equation modelling using LISREL, developed a model in which classroom scales were shown to be predictors of the outcome scales. Teacher Mastery Goals can be predicted by Teacher Support, Task Orientation and Equity. Considerable Teacher Performance – Approach Goals variance can be attributed to Task Orientation and Student Cohesiveness. Teacher Support and Investigation had a similar impact on Teacher Performance – Avoidance Goals. Academic Efficacy was strongly influenced by Teacher Support, Involvement, Task Orientation, Investigation and Equity. Overall, the analysis provided a comprehensive structural model for the prediction of the four outcome scales based on the data collected in the present study.

This section has reviewed the major findings of the quantitative data analyses. These findings provide a focus for the discussion of the results in relation to the questions driving the study and the literature underpinning the research. Chapter 6 provides a comprehensive discussion of these findings.

CHAPTER 6

DISCUSSION OF RESULTS

6.1 INTRODUCTION

This chapter synthesises the research findings of Chapter 5 and ensures the research questions stated in Chapter 1 are answered and discussed in the light of the literature regarding Catholic schools, inclusion of special needs students and the previous research of school and classroom environments and outcome scales. Although statistical analyses reported in Chapter 5 arrive at conclusions about a population based on a sample, they do not provide an assessment of the educational importance of any conclusions. Thus, the aim of this chapter is to interpret the research findings and assess their educational importance. The four sets of research questions introduced in Chapter 1 are used to organise this chapter. Questions 1.1 and 1.4 refer to instrument development issues and are discussed in Section 6.2. These questions were essential to the feasibility of the project. In Section 6.3, answers to Research Questions 1.2a, 1.2b and 1.3 are discussed. This discussion is based on results on the school environment reported in Chapter 5. Section 6.4 considers Research Questions 1.4a, 1.4b, 1.5, 2.1, 2.2, 2.3 and 3.1 concerning classroom environment and the results reported in Chapter 5. The chapter summary (Section 6.5) provides a basis for Chapter 7, the conclusion of this thesis.

6.2 RESEARCH QUESTIONS RELATING TO DEVELOPMENT OF INSTRUMENTS

One of the methodological principles adopted for this study required the development of two instruments, one for the assessment of school environment and the other for assessment of the classroom environment. The classroom instrument needed two versions, one for students and one for teachers. The literature and issues reviewed in Chapters 1 and 2, and the stakeholder perceptions discussed in Chapter 4, indicated important dimensions for the school environment and the classroom instrument.

6.2.1 What are the Dimensions of the School Environment of a Small Catholic Secondary Inclusive School?

The literature review reported in Chapter 2, the stakeholder perceptions of school environment and the evaluation of data collected from the instrument indicated that the important dimensions of the school environment were: Mission Consensus, Student Support, Affiliation, Professional Interest, Work Pressure, Holism, Special Purpose, Empowerment and Resource Adequacy. Descriptions and validation data for these scales are reported in Chapter 4.

6.2.2 What are the Dimensions of the Classroom Environment of a Small Catholic Secondary Inclusive School?

The literature review reported in Chapter 2 indicated a long history of classroom environment studies that have used different instruments and dimensions to evaluate the classroom environment. The selection of the WIHIC questionnaire as the foundation of the instrument for the present study was based on consistency with the literature, coverage of Moos's three general categories, salience to the stakeholders, economy (see Section 4.2) and research (Dorman, 2003; Fraser, 2007) which indicated that it was both reliable and valid across country, grade level and gender. The dimensions investigated by the WIHIC instrument were: Student Cohesiveness, Teacher Support, Involvement, Task Orientation, Investigation, Cooperation and Equity (see Section 4.3).

6.3 RESEARCH QUESTIONS ON SCHOOL ENVIRONMENT ANSWERED WITH THIS STUDY'S DATA

6.3.1 What differences exist between teacher and parent perceptions of the school environment of an inclusive Catholic school?

The MANOVA performed on the three scales of Mission Consensus, Holism and Special Purpose that were common for parents and teachers, indicated significant differences between the teachers' and parents' perceptions with the parents recording higher means on each of the scales. Univariate *F* tests concluded that teachers and parents differed significantly on each of

the scales. The effect sizes for Mission Consensus and Holism were very large and moderate for Special Purpose.

These results have to be interpreted with the knowledge that parents have researched which schools are best suited for their children and have made an informed choice to send their children to this school. Parents have formed opinions on the topics of Mission of the school, Holism and Special Purpose (see Section 4.4.2) related to this school while their children were still in primary school (i.e. before their children arrived at this school). It is not surprising that parents would have a positive opinion of these dimensions of the school when they first arrive at the school and the results indicate they continue to hold this opinion throughout their association with the school. Teachers, on the other hand, have been at the school for a number of years (average = 7.8 years) and have become accustomed to the environment and see it as normal. This difference in the approach of parents and teachers to the school could account for some of the differences between the perceptions of the parents and teachers.

These results have produced evidence that parents in this school support inclusion of special needs students. Johnson and Duffet (2002) reported that most parents (56%) of special needs students thought the children performed better when they were in mainstream classes and this seems to be the perception of parents in this research with a very positive response to Holism and Special Purpose. Research conducted by Adams and Adams (2000) also suggested that the needs of the whole child might be addressed successfully in the mainstream classes and this is supported by the results of this research.

As the teachers at this school applied for their positions in response to advertisements for vacancies at the school, it could be assumed that they were supportive of the school and its mission. They have been aware of the makeup of the school population when interviewed by a panel for the teaching position. The teachers selected for these positions are usually experienced teachers, and once appointed, have stayed at the school for a number of years. It is not surprising then that the teachers' perceptions of the school environment are positive. This supports the work of Chalmers (1998), Leong (2003) and Idol (2006) who concluded that more experienced teachers are more accepting of the inclusive setting in schools (See Section 2.3.3). Furthermore, there appears to be little evidence in this school that the teachers have attitudes that "led to cynicism, scepticism and suspicion" (Timora & Burton, 2006)

following increasing numbers of special needs students in the classroom. This may be due to the strict enrolment procedure and classification of special needs students conducted at the school, with the assistance of the Brisbane Catholic Education Office. Teachers have been aware of the development and implementation of these enrolment procedures.

6.3.2 What differences exist between teacher and learning support personnel perceptions of the school environment of an inclusive Catholic school?

The MANOVA performed on the nine scales of the school environment instrument with the independent variables of teachers and learning support staff indicated there were no significant differences between the teacher and learning support responses. However, univariate tests indicated statistical significant differences for Affiliation and Empowerment. Teachers had higher means than the learning support staff on all the scales and the effect sizes for Affiliation, Work Pressure, Special Purpose and Empowerment were large. Moderate effect sizes for Mission Consensus, Professional Interest, Holism and Resource Adequacy were indicated and a small effect size for Student Support.

As is typical in most Australian schools, learning support staff do not have the responsibility of organising the lessons or the topics to be taught in the classroom, as that is the teachers' role. Also, learning support personnel are not permitted to be in control of the classroom as they are not qualified teachers. It is not surprising then that their responses to the items on Empowerment are not as positive as teachers' responses. Little research has been done on the perceptions of learning support staff and the literature review did not provide any information on their perceptions of classroom or school environments in the many projects that have been researched. However, the Sacred Congregation for Catholic Education (SCCE, 1988) is very much in favour of the various groups that are associated with education being involved in the decision making process in Catholic schools. While the SCCE (1988) does not advocate a school be a democracy, it does promote all those with appropriate competencies be involved in the decisions, and in the application of these decisions, in the school. Thus, it would be more fitting to the ideal of the Catholic school if the learning support staff had a more active role in the school. Such an approach might lead to a more positive perception of Empowerment by learning support staff (see Section 2.2.3).

Similar comments can be applied to the Affiliation scale which also had significant difference between the results of teachers and learning support staff. The SCCE (1988) is quite clear in the way it defines "teachers" to comprise all those who are involved in the education of the children, including those who complement and complete the work of the teacher. The number of learning support staff is less than the number of teachers and many of the support personnel are part-time employees and they are often unavailable for staff meetings and decisions are made in their absence. There is no requirement at this school for the learning support staff to be involved in staff meetings so it is understandable for their responses to Affiliation to be less positive than that of teachers. Even though the result is not as positive, the Affiliation scale mean is still high.

The importance of Mission Consensus and Affiliation have been noted in research (Dorman, 2003) on teacher burnout. Positive perceptions of these two scales have been noted as having the effect of reducing teacher stress and the levels of burnout. These positive perceptions of Mission Consensus and Affiliation may be indicative of why teachers at this school generally remain at the school for a fairly long period of time (school records).

The scale with the least difference in results was Student Support. Learning support staff are engaged with the students for most of the day at school giving them help in the classroom. Both teachers and support staff have similar positive perceptions of the support given to students in the classroom. In her research, Idol (2006) reported that most teachers preferred to help any student requiring it, and instructional assistants should work with the whole class, not just with students with special needs. Rose and Cole (2002) also report that teachers see learning assistants as a necessary part of an inclusive classroom but there is no comment on what are the perceptions of learning assistants. Research on alternative educational programs (Quinn, Poirier, Faller, Gable, & Tonelson, 2006) reported that teachers of these programs tend to have a more sympathetic attitude toward their students, are more likely to involve students in school decision making and are more likely to perceive their schools as safe. The present research indicates that the teachers and learning support are of one mind on the way student support is conducted in this school with positive responses to this scale. Research on inclusive schooling (Rose & Coles, 2002; Rudd, 2002) show that, to be successful, teachers have to have a belief in the process of inclusion and a belief that the special needs students can succeed at school. From this present study, it appears the teaching staff has the necessary attitude to inclusion to make it successful at this school.

6.3.3 To what extent do teachers' perceptions of the school environment differ according to gender?

The MANOVA performed on the nine scales of the school environment instrument with the independent variable of gender of teachers indicate there were no significant differences between the male and female responses. The effect sizes for the differences were small for Mission Consensus, Student Support, Affiliation, Professional Interest and Empowerment; moderate for Work Pressure and Holism; large for Special Purpose and very large for Resource Adequacy. A univariate *F* test on Resource Adequacy produced a significant difference for this scale.

Huang (2000) used the *Teacher's School Environment Survey* as the instrument to investigate perceptions of school environment and differences in teachers' perceptions by gender. The study involved 127 male and 148 female teachers in 8 public high schools in the southern region of the United States. It was found that female teachers perceived their school environment more favourably than did male teachers. Female teachers reported they had: better relations with colleagues and students, greater influence than male teachers, better discipline and job satisfaction. The researcher offered a plausible explanation for these differences based on other research (Zanetic & Jeffery, 1995 cited in Huang, 2000) which found differences in communication styles between men and women influence they way they see the school environment and they way they work together. Further research (Huang & Fraser, 2009) using the *Science Teachers' School Environment Questionnaire* involved 818 teachers from 51 secondary schools located in Taiwan. Perceptions of school environment by Science teachers and analyses of the data compared gender responses. The study found significant multivariate effect for gender differences in perceptions on the nine school environment scales. Further investigation revealed female science teachers reported significantly more favourable perceptions in terms of greater Collegiality, Professional Interest and Gender Equity than male science teachers. Male science teachers reported significantly more favourable perceptions for Teacher-Student Relations and lower Work Pressure, with effect sizes in the range small to medium. There were no significant differences between male and female science teachers on Principal Leadership, Staff Freedom, Innovation, and Resources and Equipment. Reasons for these discrepancies did not appear to be simple or obvious and different communication styles of men and women was postulated

as a possible explanation, particularly for Collegiality. However, other influences, such as teacher background, school characteristics and grade-level taught also had an impact on the gender differences. These studies indicate that there is a general trend for female teachers to have a more favourable perception of school environment in some areas. Other research (Pepper & Hamilton Thomas, 2002) reported differences in the principal's management style also had an impact on school environment. However, the research conducted in this study did not have the same findings. Causal inferences for this discrepancy are not found by this research but there seems to be a connection with teachers employed, student characteristics and the type of school.

It has been suggested that a school should be flexible and recognise when the traditional male value of competition will be functional and helpful in the work environment, and when it might be more helpful to use more collaborative strategies. This would foster a more favourable environment for male teachers. Perhaps this has been happening at the school over the last 15 years as there have been male principals and deputies for this length of time. It might be advantageous to now examine what would make the school environment more favourable for the female teachers.

One explanation for the difference in perceptions of the male and female teachers on the Resource Adequacy scale could be the subject departments in which the teachers work. There were only seven males designated in the results and most males in this school are involved in the manual subjects, science, mathematics and physical education areas, all of which are reasonably well resourced and they do not need extra resources outside their areas. The females are mainly teaching in the areas of English, mathematics, computer studies, social sciences, cooking, sewing and catering. These subjects could be thought to require more resources than are available and this could account for the difference in the perceptions of Resource Adequacy.

6.4 RESEARCH QUESTIONS ON CLASSROOM ENVIRONMENT AND OUTCOME SCALES ANSWERED BY THIS STUDY'S DATA

6.4.1 To what extent do the student perceptions of the classroom learning environment differ according to gender, year level and religion?

Three separate MANOVAs were performed on the seven classroom environment scales with the independent variables of gender, year level and religion. No significant differences were reported for any of these tests. Effect sizes for the seven scales for gender were all small and those for religion were moderate for the scales of Student Cohesiveness, Involvement, Task Orientation and Investigation. For the independent variable of year level, the effect sizes varied from small to very large depending on which year level comparisons are studied.

The reported results on the differences in gender perceptions of classroom environment indicate there is very little variation between the male and female students at this school. This is in contrast to results reported by Lawrenz (1987) which indicated differences in the male and female perceptions of classroom environment, particularly in high school, with the girls viewing their classes as more cohesive than the boys. Although there was the reported limitation of having only 58 high school students in the study, Lawrenz indicated the perceived classroom environment is related to the gender of the teacher and the student. Dorman (1994) also found significant differences between the boys and girls, with the girls more positive for Interactions, Cooperation, Task Orientation, Individualisation and Teacher Control, although the differences in the mean scores were generally small. Rennie and Parker (1996) also reported differences in the perceptions of the classroom environment according to the gender of the students. In this present research there are small differences for Student Cohesiveness and Cooperation with the females' scores slightly higher on both of these scales. The males scored higher than the females on Task Orientation, Investigation and Equity with small differences. From these results it appears the girls have slightly more positive perceptions of the social aspect of the classroom but are not as positive as the males on the work aspect. Previous research by Dorman (1994) with 64 co-educational classes from 22 different schools showed clearly the girls had higher means for five of the seven scales investigated. Mo Ching Mok and Flynn (2002) reported females in Year 12 had a more positive perception of classroom atmosphere when they investigated the responses of 8265 Grade 12 students from 70 Catholic schools in New South Wales and the Australian Capital

Territory, Australia. After making statistical adjustments to their analyses to allow for such a large sample size, they concluded that there are only very small gender differences in the quality of school life. Bouffard, Roy and Vezeau (2005) considered there was no difference in their results of research that were attributable to gender, except girls exhibited more self-regulation than boys. Huang (2003) reported females were more positive to 7 of the 12 scales researched in middle school in Taiwan with 644 seventh grade students from six middle schools. The combined instrument includes 12 scales: Satisfaction, Parent Involvement, Teacher Expectation, Student Expectation, Involvement, Affiliation, Teacher Support, Investigation, Class Order, Rule Clarity, Equity, and Cooperation. The seven scales which the girls found more favourable were: Student Expectation, Involvement, Affiliation, Investigation, Teacher Support, Rule Clarity, and Cooperation. There were no significant differences for Satisfaction, Parent Involvement, Teacher Expectation, Class Order, and Equity. Huang concluded that gender is a key predictor of learning environment. This present study does not support Huang's findings for gender differences.

The WIHIC instrument was used in research (Hoang, 2008) on classroom environment in mathematics involving 600 students in Grades 9 and 10 in 30 integrated mathematics classrooms. No significant differences were reported in the male and female responses to the WIHIC. Nevertheless, males had slightly higher means on five scales and females had slightly higher means only on Teacher Support. There were equal means for males and females for Student Cohesiveness. It was found that males consistently reported slightly more positive perceptions of classroom environment and attitudes than did females. In the present study, males had higher means for Task Orientation, Investigation and Equity; females had higher means for Student Cohesiveness and Cooperation. There were equal means for Teacher Support and Involvement.

The difference of the present research to previous work may be due to the large number of special needs students involved in this study and it is recognised they have a slower social maturity rate than their peers in the general population (Bouffard et al., 2005). It must be recognised that the school in the present study has an imbalance in the school population with boys (68%) outnumbering the girls (32%), and in the responses to the instrument boys accounted for 67.1% of the data and girls 29.6%, with 3.3% failing to nominate their gender. This imbalance of the genders is usually what is expected in this type of situation with special needs students and biological reasons appear to be the main cause of this disproportionality

(Dempsey, 2003). What effect, if any, this had on the responses is unknown and the results appear to be consistent to other research findings mentioned above.

The results for the variable year level indicate Years 11 and 12 students have a more positive perception of classroom environment than the other years. However, this trend is not evidenced for Year 10 which has scores on most scales that are lower than other Year levels. The only exceptions for Year 10 having the lowest mean scores are: Teacher Support, where it is just higher than Year 8; Task Orientation where Years 8 and 9 have lower means; and Equity where Year 8 has the lowest mean. Apart from Year 10, there is a tendency for the Year Level means to increase with age, although Year 11 is consistently higher than Year 12 for all the scales except for Equity. The Year 10 students usually finish their junior high school education at this school and move to another school for the final two years of high school. As this research was conducted near the end of the school year, most of Year 10 students were preparing to leave the school and had already made arrangements at their new school for the coming year. This does have an unsettling effect on the students and this may be the reason for the discrepancy in the trend of Year 10 students compared to the other year levels.

Years 8, 9 and 10 have close means for all scales except for the following: Year 8 has the highest mean for Student Cohesiveness and the lowest means for Teacher Support, Task Orientation and Equity; Year 9 has the highest means for Involvement and Equity. Year 8 students are in their first year of secondary school. They have come from primary school where they usually have had one teacher for the whole day, to secondary school where they have different teachers for the various subjects. This could lead to students feeling a little neglected by teachers through the day and hence the Teacher Support scale is lower for them. When they come into Year 8 from the many primary schools, they are strangers at the school and efforts are made by the staff to allow them to bind together as a group. The success of this effort is found in the higher mean for Student Cohesiveness. At the same time, as newcomers to the school, they do not know their way around and they could feel a little left out of the organisation, leading to a lower mean for the Equity scale. In a study of classroom learning environments, Fraser and Goh (2003) indicated that students in the transition from primary to secondary school perceived their high school classroom environments less favourably than their primary school environments. However, they suggest that this is an area of future research. Although this research does not report on transition from one school to another, it

does indicate that Year 8 generally has a lower perception of the classroom environment than the other Years, with the exception of Year 10.

For the independent variable Religion, there were no significant differences but the effect sizes of differences in the means of Religion were all in the moderate range. According to the school roll, Catholics comprised 46.7% of the student population; Christians were 32.3% and non-Christians (including those who did not state their religion, had no religion or were non-Christian) made up 21%. From the data collected from the 152 student respondents, the following percentages were recorded: Catholics – 29.6%, Christians – 33.6% and Non-Christians 30.9% with 5.9% not offering a response to the question on religion. At the time of the students taking part in the research there was no indication that Catholics were not available to participate which would account for the discrepancies in the percentages recorded. It is more likely that some of the Catholic students have declared they belong to another religion, or say they have no religion. This can be partially explained by the Congregation for Catholic Education (2002) which recognised that there are increasing number of students who are not involved with their religion or are apathetic towards it (see Section 2.2.5). This leads to another question about the perceptions of the students who do not nominate their recorded religion. Do they have less positive perceptions of Student Cohesiveness, Teacher Support, Involvement and Task Orientation which would account for the differences between the religious groups in these scales? It is possible that these students who nominate a different religion than one recorded on their enrolment forms could change the means for the different religious groups. However, this research is unable to answer this question and it is one the school may wish to investigate further. Although there are differences in the perceptions of the different religious groups, the differences are not significant and each religious group has a positive perception of classroom environment.

6.4.2 To what extent do the student perceptions of the classroom learning environment differ according to Junior or Senior level of school?

Years 11 and 12 data were combined to form the Senior level and Years 8, 9 and 10 were combined to form the Junior level of school, as is the normal grouping in this State. The MANOVA performed on these two independent variables and the dependent variables of the seven scales produced a statistical significant difference for the perceptions of senior and junior students with large effect sizes for Student Cohesiveness, Task Orientation and Cooperation and moderate effect sizes for Teacher Support, Involvement and Investigation.

There was only a small effect size for Equity. Research by Hoang (2008) reported significant differences in the responses of Grade 9 and Grade 10 to the WIHIC and Mucherah (2007) found significant differences between Years 10 and 11 in Kenya. Research by Dorman (1994) produced significant differences for Years 9 and 12 on six of the seven scales used, with four of the scales being more positive. A further study by Dorman (2008) found Year 12 students perceived higher levels of student affiliation, cooperation, order and organisation, and individualisation but lower levels of task orientation and teacher control than Year 9 students. Generally, in all these studies the older students had a more positive response to the instruments. Levy, Wubbels, den Brok, and Brekelmans (2003) reported older students had a more positive response to their teachers and were less uncertain about the process in the classroom. While these differences were small, they were consistent with findings of prior research.

At the end of Year 10 some students had been invited to attend this school for their final two years of secondary schooling, as it was thought these students would benefit from the programs that the school offered. Other students in Year 10, who belonged to the same cohort as those invited to stay, were considered to be more able to benefit from Years 11 and 12 in a regular school with programs more suited to their ability. It is not surprising that these senior students have a more positive response to the classroom environment with programs that have been developed especially for them. It also indicates the development of programs has been successful in catering for their needs. The small difference in the effect size for Equity indicates this scale is well perceived by the whole school.

6.4.3 What differences exist between student and teacher perceptions of the classroom environment of an inclusive Catholic school?

Results of the MANOVA with teaching staff and students as the independent variables indicated statistical significant differences between the means. Further analyses showed significant differences for the scales Teacher Support with a very large effect size and Equity with a large effect size. Teacher Support, Involvement, Investigation and Equity had higher means for the teaching staff. Task Orientation was the only scale that had a higher mean for the students and two scales, Student Cohesiveness and Cooperation, were almost the same.

Previous research (Dorman, 1994; Dorman & Fraser, 2009; Fraser & Walberg, 2005; Wubbels & Brekelmans, 2005) has uniformly shown teachers perceive classroom

environment much more positively than students. Effect sizes for these comparisons have usually been very large with teacher scores higher than student class means (Dorman & Fraser, 2009). These present results are generally in agreement with previous work (Raviv, Raviv, & Reisel, 1990), with some exceptions. Teacher Support and Equity fit the pattern found in other works but the effect size for Involvement and Investigation are not as positive for teachers, as might have been expected. Student Cohesiveness and Cooperation do not match the usual pattern found previously with almost equal means for teachers and students. Task Orientation, in this research, is a scale on which students have a higher mean than teachers. The difference in perceptions of the classroom environment certainly challenges teachers to have a second look at how students perceive the environment. Catholic schools are encouraged to promote ownership of the classroom environment by all stakeholders (The Congregation for Catholic Education, 1988). It is important that there is a degree of unity in the perceptions of what classroom environment actually is and reasons for the differences in perceptions need consideration.

Task Orientation is one scale that stands out as the exception, with students being more positive than teachers. The nature of the school population, with more than 50% special needs students, may have some influence on this particular scale. Special needs students are well recognised as spending less time on task than regular students (Bouffard et al., 2005) even though they think they are working well on the task at hand. Teachers are more aware of the actual work done on task and often have a different opinion to students. This is reinforced when they see the final product of the students' work. It is not surprising, therefore, that the teachers' perceptions of Task Orientation are less positive than these students' perceptions. The ability of these students to stay on task is another aspect that needs to be considered. Research by Sideridis (2005a) indicated students with learning difficulties may enter a vicious cycle of non-engagement in tasks which would lead the student to believe a small effort by most students is a big attempt by them. A student may be producing his or her best effort and trying very hard but it appears to the teacher that this is not the case. This researcher has many personal examples of urging students to keep on task only to hear students say they are doing their best. It took some experience to understand that what seems like lack of effort by some students, when compared to the efforts of the general class, is in fact very good work for them.

In research by Allen and Fraser (2007) with primary students and their parents, parents felt they had given their children an appreciation of the importance of task orientation and that the children had applied this to their schoolwork. This may also apply to the children involved in this study but there is no supporting evidence from parents as they were not part of the classroom environment study. However, anecdotal evidence given to the researcher by parents over several years gives credence to this idea. Parents of children at this school are often more easily satisfied with their child's performance than are teachers and this may also account for some of the discrepancy between students' and teachers' perceptions of Task Orientation.

6.4.4 What relationship exists between the classroom environment and student academic efficacy?

A simple correlation analysis revealed Academic Efficacy was linked to all seven scales of the WIHIC in this study. A canonical correlation, using stepwise regression revealed that Task Orientation and Investigation were significant predictors of Academic Efficacy. The WIHIC instrument has indicated a strong link between classroom environment and Academic Efficacy with two scales being significant predictors. It is not surprising that Task orientation and Investigation are so closely associated with Academic Efficacy. Both of these scales indicate an amount of effort used by students in their classroom studies, allowing them to see themselves as being capable of further work in this area. Other research (Dorman, 2001) has also indicated the usefulness of WIHIC in revealing links to Academic Efficacy.

The Academic Efficacy reported a very positive result for the respondents. This does not indicate the academic performance is also as positive as this. The results for the National Assessment Program – Literacy and Numeracy (NAPLM) tests were published in the newspaper, *The Courier Mail*, (Chilicot & Chudleigh, 2009) with all schools in the State reported. This was the first time that Year 9 classes in the State had sat the tests and considerable interest was shown in the results. The school that is the subject of this research had the following results as percentages of the students at or above national minimum standard: Reading 61%, Writing 48%, Spelling 33%, Grammar and Punctuation 38%, and Numeracy 62%. These percentages do not include those who were exempted from the NAPLM tests due to a disability. There were not many schools that had percentages lower than these and this is not surprising considering the composition of the school population. Despite this indication of lower academic performance, students still have a high perception of Academic Efficacy. Further investigation of students' perception of assessment tasks might

give some clarity to discussion of the difference between academic efficacy and academic performance. *Perceptions of assessment tasks inventory (Dorman & Knightley, 2006)* could be modified for use in this circumstance.

Academic efficacy is just one aspect of a person's identity that contributes to self efficacy. It is generally perceived that a person will have a higher sense of self efficacy when it is based on past performance (Bouffard et al., 2005; Lancaster, 2005; Murray & Greenberg, 2001) and this leads to the question of what have been the successes for these students to give them a high sense of academic efficacy. The lack of academic performance by the students is well documented and yet teachers and parents have managed to keep their students performing at a level that allows students to have a positive concept of their ability to achieve academically. This positive academic efficacy belief is related to the effort invested in a behaviour and perseverance in the face of difficulties. Other aspects of the experience of students, including performance accomplishments, vicarious learning, verbal persuasion, and physical/affective status also have an influence on academic efficacy (Bandura & Barbaranelli, 1996). Research by Bandura and Barbaranelli (1996) also indicated that academic efficacy was influential in producing prosocialness, peer acceptance, low despondency, repudiation of moral disengagement, a low level of emotional and behavioural problems, and high scholastic achievement. It is therefore seen as an important construct for the students to view positively. Students with special needs were not included in this research by Bandura and Barbaranelli (1996) so the high scholastic achievement reported would have been high for regular students. The students that took part in this present research would have to consider their academic achievement as the best that they can do and not compare it to work by those who are more able. This would allow them to consider it to be high achievement. Bandura (2001) further emphasises the importance of efficacy beliefs as people believe they can produce desired results and forestall detrimental ones by their actions, and, if they do not believe this, they have little incentive to act or to persevere in the face of difficulties. These efficacy beliefs play a central role in self motivation through goal challenges and outcome expectations.

Words of warning were written by Humphrey (2004) about students being praised for their intelligence as this made them extremely vulnerable to the effects of subsequent setbacks. Praise for effort may be more beneficial and long lasting. Further, by concentrating on self-esteem in preference to academic achievement, students may be lead into selecting inappropriate and risky goals beyond their competence. The proposed solution is to ensure a student's self-esteem is nurtured, but not at the expense of learning, and is realistic and in line

with the individual's competence. Many students with learning difficulties are unlikely to gain high academic achievement but they are able to gain high academic efficacy as reported in this study. As a result of these warnings, Humphrey (2004) suggests that inclusive schools should make sure that all success is valued, taking into account the skills, knowledge and experience of all students, including those with different learning styles and needs.

6.4.5 What relationship exists between the classroom environment and students' perceptions of the teacher's mastery goals?

A simple correlational analysis revealed Teacher Mastery Goals was linked to all seven scales of the WIHIC in this study. A canonical correlation, using stepwise regression revealed that Task Orientation, Teacher Support and Equity were significant predictors of Teacher Mastery Goals. The WIHIC instrument has indicated a strong link between classroom environment and Teacher Mastery Goals with these three scales being significant predictors of the mastery goals. These results support findings from previous research which linked mastery goals to positive aspects of classroom environment.

A central tenet to a mastery goal is that effort and outcome are directly related, and it is this belief that maintains the behaviour directed towards achievement over time (Ames, 1992). With a mastery goal, students direct themselves towards developing new skills, improving their level of competence, trying to understand their work, or achieving a sense of mastery based on their own standards (Ames, 1992). The importance of mastery goals for students who do not, or can not, achieve academic excellence is that they are able to apply themselves to tasks with the belief they will achieve their aims and they have the motivation to learn. Mastery goals are associated with a wide range of motivational variables that are linked to positive achievement activity (Ames, 1992; Schunk, 1995). Students are aware that their teachers are setting these goals for them, although unaware of the outcomes of these goals. The importance of mastery goals for students is critical for them to maintain a focus on learning and understanding (Friedel et al., 2007; Schunk, 2001). Sideridis (2005b) reported that mastery goal structures were associated with enhanced perceptions of reinforcement, higher levels of engagement and positive affect whereas performance goal structures had either negative effects (e.g., positive relations to negative affect) or null effects.

It is not surprising that Task Orientation is influential in predicting mastery goals. It indicates the students are working well on tasks set by the teacher and the completion of tasks is itself a

mastery goal. However, it is important that the goals set are not beyond the students' capabilities. However, Lancaster (2005) reports that students with learning difficulties often overestimate their abilities, and being asked to do work that is too hard may not be a problem for some. Why this is so is not clear but it may be due to these students not having developed the necessary cognitive skills to make such a judgement (Lancaster, 2005). The Teacher Support scale also has an influence on mastery goals, as might be expected, as the teacher tries to help students increase their mastery of the goals they set for them.

6.4.6 What relationship exists between the classroom environment and students' perceptions of the teacher's performance goals?

A simple correlational analysis revealed that Teacher Performance-Approach Goals was linked significantly to all the WIHIC scales except the Equity scale. The Teacher Performance-Avoidance was related to Teacher Support, Task Orientation, Investigation, Equity, and Cooperation. Student Cohesiveness and Involvement scales were not linked significantly to Teacher Performance-Avoidance Goals. From the canonical correlation analysis, predictors of the Teacher Performance-Approach Goals (TPAG) were found to be Task Orientation, Student Cohesiveness, Equity and Teacher Support. Teacher Support and Investigation were predicators of Teacher Performance-Avoidance Goals (TPAvG). The scale means and standard deviations from the data collected from the students and teaching staff are shown in Table 6.1. These results indicate teachers are not nearly as positive on these scales as students with both effect sizes being large. Further investigation of the difference in the responses of students and teaching staff would be beneficial to understanding this issue since the students perceive teaching staff as setting these performance goals and teaching staff are not nearly as clear cut in their responses. Teacher response is in the negative for TPAvG.

Table 6.1

Scale means and standard deviations for students and teaching staff

	Students		Teaching staff	
Scale	*Mean*	*SD*	*Mean*	*SD*
Teacher Performance - Approach Goals	10.04	2.60	8.50	2.39
Teacher Performance - Avoidance Goals	12.72	3.35	9.25	3.93

Despite the evidence that teaching staff did not give a very positive response to the performance goals, Teacher Support was seen by students as an indicator for both TPAG and

TPAvG. The two performance goals indicate whether the teacher calls attention to children who receive the highest grades and test scores, tells the class who is doing well or poorly in the subject, and provides children with information about how they compare to other children in the class (Friedel et al., 2007). Research by Schunk (1995) reported that the performance goals need to be associated with self-evaluation to produce self-regulatory behaviour and motivation to learn but this is not as effective as mastery goals and self-evaluation to achieve the same ends. This might be a reason teachers are not too positive about performance goals in this study as they have experienced little motivation of students from them.

The role parents play in goal setting for students has not been examined in this research and it may be that they are the ones who encourage their children to perform well. However, there are parents who say they are not concerned with the performance of their children in the academic area, provided they are doing their best. Parents are preoccupied with their child's progress and rely heavily on objective reports such as grades (Bouffard et al., 2005). School reports by teachers compare students only with their own class. Teachers report students to be performing at an acceptable level for their ability and parents encourage the students to continue to do well, compared to the rest of the class. This parental influence may have an effect on the performance goals of the students that is beyond what the teachers perceive to be happening.

In a review of studies of performance goals, Midgely, Kaplan and Middleton (2001) report that there is evidence that performance-approach goals at a point in time predicted performance-avoidance goals at a later time for students who were high in academic efficacy. The reasons for this are not clear and they recommend that efforts be put into mastery goal orientation where teachers can provide critical feedback to students about what is wrong with their work and how to improve it without reflecting their ability. However, less is known about how to promote mastery goals in the classroom than the salience of performance goals. There is a need for more research to be done in this area of teacher goals to find the connections between ability and performance.

Task Orientation scale is a predictor of TPAG, as might be expected, but is not a predictor for TPAvG. This indicates that students are willing to work at their tasks to improve their results but are not so willing to do this to prove they are comparable to other students. Similarly, Student Cohesiveness predicts a willingness to improve one's own academic performance but is unrelated to comparing one's performance to that of others. Equity is another scale that

predicts TPAG but not TPAvG. Implications from these results are important for teachers as they try to encourage students to perform at a standard that is suitable to their capabilities. Teaching staff do not perceive themselves to be strongly promoting TPAG and, to an even lesser extent, TPAvG. However, students acknowledge the existence of these goals. Brophy (2005) suggests that performance goals of students are a low-incidence phenomenon and they do not generally include elements of peer comparison and competition. Hence teachers who promote these goals could be counterproductive in trying to set goals in which students are not usually interested. The importance of monitoring changes in classroom procedures is emphasised by these findings and previous research (Roth, 1998).

6.4.7. Can a valid model be developed that relates students' perceptions of the classroom environment with students' perceptions of Teacher Mastery Goals, Teacher Performance – Approach Goals, Teacher Performance – Avoidance Goals, and Academic Efficacy?

It is possible to develop a model that relates students' perceptions of the classroom environment with the students' perceptions of Teacher Mastery Goals, Teacher Performance-Approach Goals, Teacher Performance-Avoidance Goals, and Academic Efficacy (see Section 5.6). Although this model is of mediocre parsimony, it should be interpreted as having a very good overall fit to the data.

Of the seven scales of the WIHIC instrument, only Cooperation was not a predictor of any of the outcome scales. Two scales, Task Orientation and Teacher Support, are predictors of three outcome scales. Task Orientation was a predictor of Teacher Mastery Goals, TPAG and Academic Efficacy. This indicates Task Orientation is a very important factor in the classroom and is by far the biggest influence on Academic Efficacy and is also a larger influence on the Teacher Mastery Goals and TPAG than any of the other scales. The importance of Task Orientation in the classroom has been reported in previous research (Dorman, 2001; Dorman & Fraser, 2009; Ogbuehi & Fraser, 2007). The implication for teachers is that they must encourage the students to stay on task and this will improve the three outcome scales reported here. This model also displays Teacher Support scale as a predictor of three outcome scales, Teacher Mastery Goals, TPAvG and Academic Efficacy. The important issue with this scale is that it has a negative influence on the student's Academic Efficacy. The more support students perceive they are receiving from the teacher

the less likely they are to develop confidence in their own academic ability. While this is perhaps understandable, it is hard for teachers to refrain from offering help and support to students who are struggling with the work. This is certainly true if the student is not academically gifted, and this is mostly the case for students in this research. While a teacher has to be aware of the student's academic efficacy and not be too supportive, the teacher also has to be supportive to help with the Mastery Goals and the TPAvG, which require this support. There is a delicate balance to be maintained in this Teacher Support scale.

Two scales of the WIHIC instrument, Investigation and Equity, are shown to be predictors of two outcome scales each. Investigation is a positive predictor of Academic Efficacy and, to a lesser extent, TPAvG. As the student carries out investigations to gain understanding or to solve problems, there seems to be an improvement in academic efficacy of the student. This would indicate that having students involved in investigation and problem solving is a useful way of increasing their appreciation of their academic ability. Likewise, the TPAvG is also increased as students discover answers through their own work that allow them to show that they are as good as the rest of the class (Zentall, 2005). Equity is the other scale that is a positive predictor of Teacher Mastery Goals and Academic Efficacy. If the students feel they are treated equitably in the classroom, they are more inclined to have a higher sense of their ability in the academic area and also have a tendency to perceive the teacher as trying to have them adopt mastery goals rather than performance goals.

Student Cohesiveness and Involvement were two positive indicators of one outcome goal each. Student Cohesiveness predicts positive outcomes for TPAG. The extent to which students are friendly, help each other and feel liked in the classroom seems to facilitate the perception of TPAG. Research by Phan (2008) with regular senior students found student cohesiveness was instrumental in the students adopting performance-approach and performance-avoidance goals. These findings by Phan (2008) led to the suggestion that students learn collectively from their classroom connections and copy each other's habits and methods. The sharing of beliefs and expectations may guide the students in their goal orientation. Although this present research is concerned with teacher performance goals, the conclusion that a cohesive classroom is beneficial for TPAG is in keeping with the current findings, even though TPAvG is not predicted in this model. Student Cohesiveness and TPAvG had a small non-significant simple correlation calculated from the data of this research and this does not contradict previous findings. The Involvement scale is a positive

indicator of Academic Efficacy and the model confirms anecdotal evidence that the more students are involved in the classroom the better will be their overall concept of themselves.

When the model is examined from the aspect of the outcome scales, Academic Efficacy is the scale most influenced by the classroom environment. Teachers who provide support, demonstrate equity in the class, ensure the students are on task, and provide opportunities for student involvement and investigation are more likely to improve the students' academic efficacy. Similar findings are reported in research (Dorman, 2001; Dorman & Fraser, 2009) with regular students and these further emphasise the important role classroom environment plays in the development of students' academic efficacy. One difference this research has found is the negative influence Teacher Support has on Academic Efficacy, which is in contrast to the research previously noted (Dorman, 2001; Dorman & Fraser, 2009). Further investigation of this difference is warranted and a reason for it may be found in the type of student who was part of this research. Students with special needs may have been offered help through their primary school years which has not allowed them to develop their academic efficacy.

Research by Waldrip, Fisher, and Dorman (2009) on exemplary teachers and classroom environment was able to show that higher means on five of the scales of the WIHIC distinguished exemplary teachers from the others. The question arises: 'Are exemplary teachers the ones who develop good academic efficacy in their students?' The five scales of WIHIC used by Waldrip et al (2009) (Student Cohesiveness, Teacher Support, Involvement, Task Orientation and Equity) were very similar to those that predict Academic Efficacy. The exceptions in this present research were: Investigation, which was not used in the research on exemplary teachers, and Student Cohesiveness which did not rank as a predictor of Academic Efficacy. Further research on this connection would be useful for understanding more of the psychosocial environment of the classroom.

Teacher Mastery Goals, according to this model, are predicted by Teacher Support, Task Orientation and Equity. These three scales are ones that involve teachers working closely with students in supporting, encouraging and accepting them in their classrooms. This supports the conclusion of Fraser and Walberg (2005) that teacher-student relationships are linked to student outcomes. While teachers set the goals for the students to master, students do not know what strategies to use, or when to use them, to achieve the goals. Explicit instructions

and sequencing of materials is essential for special needs students to achieve their goals (Lancaster, 2005) and it is apparent that this seems to be happening in this school.

The two teacher performance goals were predicted by two scales each: TPAG by Student Cohesiveness and Task Orientation; TPAvG by Teacher Support and Investigation. Performance goals are not clearly understood and there is conflicting evidence of their usefulness in the classroom. Some examples of patterns associated with performance goals are: avoidance of challenging tasks; negative affect following failure; positive affect following success with little effort; and use of superficial or short-term learning strategies, such as memorising and rehearsing (Ames, 1992; Midgley et al., 2001). It is also noted that students often perceive instructions in different ways, interpreting instructional practices in performance goals terms (Urdan & Mestas, 2006). This may account for the differences in the teacher and student perception of performance goals. It appears that teachers should be wary of setting performance goals for students unless they have clear ideas of what is to be achieved and allow for self-evaluation of the students (Schunk, 1995).

6.5 CHAPTER SUMMARY

This chapter has discussed the results of this study by drawing on literature on the Catholic school, learning environment research, student outcomes research and inclusive schools. In summary, this discussion has drawn conclusions about the school and classroom environments of a small Catholic inclusive school.

1. Nine dimensions of a Catholic school environment were identified: Mission Consensus, Holism, Special Purpose, Student Support, Affiliation, Professional Interest, Resource Adequacy, Work Pressure and Empowerment. An instrument was developed to measure the perceptions of teaching staff and parents about these dimensions.

2. The dimensions of the classroom environment were identified and the ‘What is Happening in This Classroom’ instrument was used to assess these dimensions.

3. Parent and teacher perceptions of the school environment in the three scales of Mission Consensus, Special Purpose and Holism, differed on all these scales with the parents being more positive in each case.

4. The differences between the perceptions of teachers and learning support staff were not significant but teachers had higher means than learning support staff on all scales. The largest differences were on the Affiliation and Empowerment scales.

5. There were no significant differences in perception according to gender of teachers, although there was a very large effect size for Resource Adequacy, with the males scoring higher.

6. Student perceptions of the classroom environment showed no significant differences according to gender, religion or year. The gender responses were very similar and consistent with previous research. The year level responses displayed the differences between the Senior and Junior classes which were consistent with finding of previous research. Year 8 had the lowest means for scales of Teacher Support, Task Orientation and Equity in keeping with their change of schools and status as the youngest members of the school. Religion showed some moderate differences in the responses for some groups on Student Cohesiveness, Involvement, Task Orientation and Investigation but the number of students in each nominated religion group was not in agreement with the school statistics.

7. Senior and Junior Years displayed significant differences on all scales, with senior students scoring higher means in all cases. Equity was the scale that had only a small difference.

8. The differences in perceptions of students and teaching staff were significant. Teachers scored higher means on most scales, with Teacher Support and Equity having the biggest differences. Task Orientation was the only scale on which students scored a higher mean. Involvement and Cooperation had equal means for students and teaching staff.

9. A simple correlation existed for 25 of the 28 possible relationships between the classroom environment scales and student outcome scales at a significant level. Further statistical investigation revealed the following: Academic Efficacy was predicted by Task Orientation and Investigation; Teacher Mastery Goals was predicted by Equity, Task Orientation and Teacher Support; Teacher Performance-Approach Goals was predicted by Task Orientation, Student Cohesiveness, Equity and Teacher Support; and Teacher Performance-Avoidance Goals was predicted by Teacher Support and Equity. Overall, Task Orientation, Equity and Investigation are key predictors of teacher Mastery Goals and Academic Efficacy.

10. Finally, structural equation modelling using LISREL can be used to develop a model that relates students' perceptions of classroom environment in an inclusive school with student outcomes. The model shows six of the seven classroom environment scales are linked to one or more of the student outcome scales. The exception in the classroom environment scales is Cooperation which was not linked to any outcome. The model shows: Teacher Mastery Goals is linked to Teacher Support, Task Orientation and Equity; Teacher Performance-Approach Goals is linked to Student Cohesiveness and Task Orientation; Teacher Performance-Avoidance Goals is linked to Teacher Support and Investigation; and Academic Efficacy is linked to Teacher Support, Involvement, Task Orientation, Investigation and Equity. Clearly, classroom environment is an important influence in student outcomes and the links between classroom environment and student outcomes is too apparent to be ignored. However, it must be noted that this research does not provide any evidence of causality (Barnes & Lewin, 2004).

The discussion in this chapter provides a platform for the conclusion and recommendations in the next chapter which concludes this thesis.

CHAPTER 7

CONCLUSION: SUMMARY, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

7.1 INTRODUCTION

This chapter concludes the thesis by addressing four important areas. Section 7.2 summarises the study by re-stating its purpose, methodology, structure and key findings. Section 7.3 considers the discussion of the previous chapter and identifies the important implications of the study in the context of an inclusive Catholic school. These implications focus on school environment, classroom environment, connections between classroom environment and outcomes, and a model that relates students' perceptions of classroom environment and student outcomes. Recommendations of the study are included in this section. Section 7.4 summarises these recommendations. Section 7.5 addresses the limitations of the study. Concluding remarks to the thesis are provided in Section 7.6.

7.2 SUMMARY OF THE STUDY

The genesis of this study was the importance of school and classroom environments in a small Catholic secondary inclusive school. Literature suggested there should be a Catholic ethos that can be found in a Catholic school and this should be recognised in the perceptions of students and teachers in the school. Previous empirical studies have not investigated adequately the psychosocial environment of an inclusive Catholic school and the connection this environment has with student outcomes. Accordingly, the purpose of this study was to conceptualise, assess and investigate the school and classroom environments of a Catholic inclusive school. Pursuant to this goal, a series of research questions were defined. As detailed elsewhere in this thesis (Section 1.2.2), these research questions were of two types: measurement (i.e. conceptual) and quantitative.

A review of learning environment literature (Cresswell & Fisher, 1999; Fraser & Walberg, 2005; Lewin, 1935) led to the development of a research methodology based on three principles. The first principle required the use of student, teacher and parent perceptions to assess the learning environment. The second principle required the use of quantitative data

collection methods. The third principle required the development of separate instruments for the assessment of school-level and classroom-level environments.

To answer the research questions, a three-stage research program was developed. Context-specific instruments were developed in Stage 1. These instruments were administered to students, teaching staff and parents who were associated with the research school. Parents participated in the gathering of perceptions of school environment for three scales only. All students, teaching staff and parents were invited to participate and 152 students, 24 teachers, 17 learning support staff and 40 parents responded to the invitation.

Statistical analyses, including multivariate analysis of variance and correlational analyses were performed on the quantitative data. Structural equation modelling with LISREL was used to develop a model showing relationships between classroom environment scales and student outcome scales. This model had a sound fit to the data collected in this research. Results from analyses of the quantitative data were discussed in light of literature relating to school environment, classroom environment and student outcomes.

Notwithstanding the importance of all of the results reported in Chapter 5 and discussed in Chapter 6, there are five major patterns to the findings.

1. It is possible to identify specific dimensions of the school and classroom environments for a Catholic inclusive school.

2. Parents had significantly higher perceptions of Mission Consensus, Special Purpose and Holism than did teachers. Teachers were more positive than learning support staff on all scales with significant differences for Affiliation and Empowerment. Male teachers generally had a more positive perception of school environment than female teachers.

3. Male students generally had more positive perceptions of classroom environment than did female students and older students were more positive than younger students. Teachers had more positive perceptions of classroom environment than did students with the exception being Task Orientation, on which students were more positive.

4. There were significant simple relationships in 24 of the 28 relationships between classroom scales and outcomes. Each of the outcome scales had significant predictors of two or more scales from the classroom environment, with Task Orientation and Teacher Support being the most influential.

5. An inclusive Catholic school is able to maintain high quality school and classroom environments.

7.3 IMPLICATIONS OF THE STUDY

In the previous chapter, the 12 research questions are discussed in light of Catholic education literature and previous learning environment research. The purpose of this present section is to highlight the key implications of this study for Catholic education in an inclusive school. The discussion in Chapter 6 dealt with the findings of the study in relation to each of the research questions. This section synthesises the findings to form a number of recommendations. There has been no attempt to include all of the findings in this synthesis. Rather, an emphasis has been placed on those results for which possible initiatives are evident. Recommendations are noted throughout the section and are summarised in Section 7.4.

7.3.1 Implications for a Catholic Inclusive School

The first implication for a Catholic inclusive school relates to the instrument used in this study. It is clear from the results of this study that this instrument was able to be developed and used to investigate the specific dimensions of an inclusive Catholic school environment. Three categories for conceptualising and assessing human environments (Moos, 1968), Relationship, System Maintenance and System Change, and Personal Growth were used. For Relationship Dimension, the scales were: Empowerment, Student Support, Affiliation, Special Purpose and Holism. The scales for System Maintenance and System Change were: Mission Consensus, Resource Adequacy and Work Pressure. For Personal Growth Dimension, the scale was Professional Interest. This instrument clearly identified differences of perceptions of parents and teachers. The Congregation for Catholic Education (1988) encourages students, teachers and families to be involved in achieving the aims of a school and therefore common perceptions of Mission Consensus, Holism and Special Purpose are

needed. It is recommended that these differences be further investigated to establish understanding and reasons for these differences *(Recommendation 1)*.

A second implication of this study relates to the difference in perceptions of teachers and learning support staff of the school environment. Teachers were more positive than learning support staff on all scales. Discussion in Chapter 6 outlines some possible reasons for these differences, particularly with Affiliation and Empowerment. There has been little research with learning support staff and perceptions of school environment and this deficiency needs to be addressed. The Catholic school should be a place where all those involved in the educational community are also involved in the decision making process (The Sacred Congregation for Catholic Education, 1977). If this were true for the learning support staff, then there should be a more positive outcome in perceptions of Affiliation and Empowerment. As the school employs more learning support staff due to the number of special needs students enrolled, it is recommended that more research is conducted to ascertain ways of improving perceptions of Affiliation and Empowerment for learning support staff *(Recommendation 2).*

Another implication of the study concerns gender differences in perceptions of school environment. There are more female teachers than male teachers at the school. The study has shown that males generally have a more positive perception of the school environment than the females. While these findings are not statistically significant, it would not be in keeping with the ethos of a Catholic school to ignore these differences. In particular, Resource Adequacy is recognised as an area that requires further investigation. In previous research (Huang, 2000) discussed in Chapter 6, female teachers generally had more positive perceptions of school environment than male teachers. A possible cause was proposed based on the different communication styles of males and females and it was suggested that school administration could change this discrepancy in perceptions by recognising and using different styles of communication with the staff. This suggestion may also be true for this study and the long history of having males as principals and deputy principals may have produced a communication style particularly suited to males. It is recommended that the school further investigates the reasons for these differences in male and female teacher perceptions of school environment, with emphasis on perceptions of adequate resources *(Recommendation 3).*

A fourth implication of the findings of this study relate to the fact that Years 8 and 10 students generally have the lowest perceptions of classroom environment. These findings raise several issues for further discussion in school. Since students in Year 8 are new to the school, it would be useful to understand how they perceive their present classroom environment compared to previous years. Although students have a favourable opinion of the classroom environment, there could be an underlying reason for them having the lowest opinion. Previous work (Fraser & Goh, 2003) has indicated that transition from primary to secondary school led to less favourable perceptions of classroom environment. If this is the reason for Year 8 to be less positive than other years, then it needs to be addressed by the school. Likewise, Year 10 is in a situation different to other years because most of the Year 10 cohort finish at the school and move to another school for their senior years. Due to the nature of the school, Year 10 students are seen as the school leaders and it could be assumed they had more favourable impressions of the classroom environment than other years. Since these findings indicate that this is not the case, it is worthwhile to investigate if it is true just for this particular class or is it true for Year 10 students in general as they pass through the school. It is recommended that teachers of Years 8 and 10 are made aware of the findings of this study as they relate to their year and they make efforts to find causes for the lower perceptions of classroom environment *(Recommendation 4)*.

A further implication of this study relates to the more favourable perceptions of the classroom environment by Senior students than those of Junior students. This is in keeping with previous research (Levy et al., 2003) where older students had more favourable perceptions. The Senior students in this study participate in school programs that have been designed for them and they seem to have readily accepted them. Teachers who continue to design and adapt programs for future use need to be aware that the students generally are appreciative of these programs and their implementation. It is recommended that teachers continue to monitor perceptions of Senior students as they develop new programs for future use *(Recommendation 5)*.

Another implication of the findings of the study relates to the difference between teacher and student perceptions of classroom environment. These findings are generally in accord with previous research (Dorman & Fraser, 2009; Fraser & Walberg, 2005) which uniformly have teachers with more favourable perceptions of classroom environment. If teachers have a favourable impression of the classroom environment and are unaware that students are not as

affirming of it as they are, then it is likely classroom environment will be seen as being acceptable and not much effort will be directed towards its improvement. Much importance has been placed on a positive classroom environment (Fraser & Goh, 2003; Zandvliet & Fraser, 2005) and continued research (Dorman & Fraser, 2009) has further emphasised its importance. Teachers need to be informed of the importance of classroom environment and the likelihood that they have a more positive perception of it than do students. It is recommended that some form of professional development be provided for teachers and learning support staff in the area of classroom learning environment and the teachers' role in developing this environment *(Recommendation 6)*.

Another key finding of this study was the differences between teacher and student perceptions of Task Orientation in the classroom environment. This scale is the only one in which students have a more positive perception than teachers. This is not indicated in previous research (Wubbels & Brekelmans, 2005) and there appears there might be a connection with the number of special needs students who are typically not as task orientated as regular students (Bouffard et al., 2005). The importance of Task Orientation is discussed in Chapter 6 and an understanding of the causes of the discrepancy in perceptions of teachers and students needs to be researched. It is recommended that teachers investigate reasons why they have a lower perception of Task Orientation than students, which is an unusual result *(Recommendation 7).*

Another implication of the findings of this study relate to the academic efficacy of students. It is surprising that students have very favourable perceptions of their academic efficacy when there are so many special needs students in the school population. Discussion in the previous chapter outlined the importance of academic efficacy for all students and how it was influential in producing prosocialness, peer acceptance, low despondency, repudiation of moral disengagement, a low level of emotional and behavioural problems, and high scholastic achievement (Bandura & Barbaranelli, 1996). Since students participating in this study are not usually recognised for their high scholastic achievement when compared to regular students, another predictor is producing this positive outcome. Previous research (Bouffard et al., 2005; Lancaster, 2005; Murray & Greenberg, 2001) indicates that positive self efficacy is based on past performance and these students appear to have had satisfactory performances. Teachers and parents are likely instruments who have provided students with positive outcomes that have enabled students to consider that they have achieved well in their studies. Identifying

these experiences is important for teachers who strive to help students maintain their high academic efficacy (Ozdemir, 2006). It is recommended that further investigation be conducted to ascertain the predictors of high academic efficacy as reported in this study *(Recommendation 8).*

While it is important for individuals to have a positive perception of their academic efficacy, caution has been recommended (Humphrey, 2004). A high opinion of academic efficacy can have a detrimental effect on potential outcomes as students can be vulnerable to future setbacks. Students with high academic efficacy, but little competence, may have unrealistic expectations of their achievements, leading them to make poor choices. Thus, it is important that teachers are aware of the significance of students' academic efficacy and understand its importance for future academic development. It is recommended that teachers participate in professional development that focuses on the academic efficacy of students *(Recommendation 9).*

A further implication of the findings of the study concerns the correlation of classroom environment scales with student outcomes. Each of the outcomes, Teacher Mastery Goals, Teacher Performance-Approach Goals, Teacher Performance-Avoidance Goals and Academic Efficacy, is related positively to two or more scales on the WIHIC. Teachers should be informed of this link between classroom environment and outcomes and be encouraged to make use of it as it seems to offer some direction for action to improve student outcomes *(Recommendation 10).*

Teacher Support is one scale that has implications for teachers as the findings of the study indicate it has a negative impact on Academic Efficacy (i.e. the more teacher support provided for students the lower is their perception of Academic Efficacy). At the same time, Teacher Support is reported to have a positive influence on both Teacher Mastery Goals and Teacher Performance-Avoidance Goals. Many of the students involved in the study are classified, through a rigorous process, as needing extra support and the school is assigned learning support staff to provide this support. It seems that there is a fine line between providing enough help for progress and providing too much help which appears to be counter-productive. An in-depth investigation into the quality and quantity of help students need for their academic improvement is recommended *(Recommendation 11).*

7.3.2 Implications for Future Learning Environment Research

It is clear from the results of this study that differences in perceptions of school environment exist between parents and teachers and between learning support staff and teachers. Parents have spent considerable time and effort in searching for a school that they consider is suitable for their children, many of whom have special needs. Little, if any, research has been done on what parents are searching for in this situation and these findings indicate they have a clear idea of what schools are offering their children. The instrument developed for this study has elements of previous instruments used in different types of schools and it has now been validated for use in a school where emphasis is placed on inclusion of all students, even those with special needs. This instrument could be used in a wide variety of schools to ascertain the perceptions of school environment by the different stakeholders. It is recommended that schools that have a special purpose or character undertake research into their school environment to gain understanding of perceptions of their environment by the different stakeholders *(Recommendation 12)*.

This study has broken new ground with the investigation of classroom environment in a school with a large number of special needs students. There is little analogous research as the students are different to regular students in their abilities and needs. Further investigation is needed to discover what differences, if any, exist in schools that cater for large numbers of students with special needs in their population. Some research has been done with classes that have a few special needs students but this has concentrated more on what effect this has on teachers rather than what happens with classroom environment (Symonds, 2003). It is recommended that further classroom environment research be conducted in classes which include special needs students as little is known of the effects of inclusion in such classrooms *(Recommendation 13)*.

Similarly, the investigation of student outcomes deserves more attention in schools with special needs students. These students are unable to achieve high academic standards owing to their limitations. It is important for schools to have some understanding of what outcomes they should be promoting for these students. This study investigated only four outcomes and reported results that should have an impact on teaching in the school as the results become known and assimilated by teachers. It is recommended that further investigation of student

outcomes be conducted in association with classroom environment research for schools that have special needs students as part of their enrolment *(Recommendation 14)*.

A further recommendation is that small scale in-depth studies involving qualitative methods be conducted to tease out the reasons why students hold particular perceptions of the learning environment. This is a difficult task as these students find it difficult to explain why they feel and act in a certain manner *(Recommendation 15).*

7.4 SUMMARY OF RECOMMENDATIONS

Recommendation 1 That differences in the perceptions of parents and teachers be further investigated to establish understanding of these differences and reasons for them.

Recommendation 2 That as the school employs more learning support staff due to the number of special needs students enrolled, more research is conducted to ascertain ways of improving perceptions of Affiliation and Empowerment of learning support staff.

Recommendation 3 That the school further investigates the reasons for differences in male and female teacher perceptions of school environment, with emphasis on perceptions of adequate resources.

Recommendation 4 That teachers of Years 8 and 10 are made aware of the findings of this study as they relate to their year and that they make efforts to find causes for the lower perceptions of classroom environment by students in their year.

Recommendation 5 That teachers continue to monitor perceptions of classroom environment by Senior students as they develop new programs for future use in the Senior section of the school.

Recommendation 6 That some form of professional development be provided for teachers and learning support staff in the area of classroom learning environment and the teachers' role in developing this environment.

Recommendation 7 That teachers investigate reasons why they have perceptions of lower Task Orientation than students.

Recommendation 8 That further investigations be conducted to ascertain the predictors of high academic efficacy of students as reported in this study.

Recommendation 9 That teachers participate in professional development that focuses on the academic efficacy of students.

Recommendation 10 That teachers should be informed of this link between classroom environment and outcomes and be encouraged to make use of it as it seems to offer some direction for action to improve student outcomes.

Recommendation 11 That an in-depth investigation be conducted into the qualitative and quantitative help students need for their academic improvement.

Recommendation 12 That schools that have a special purpose or character undertake research into their school environment to gain understanding of perceptions of their environment by teachers and parents.

Recommendation 13 That further classroom environment research be conducted in classes which include special needs students as little is known of the effects of inclusion in such classrooms.

Recommendation 14 That further investigation of student outcomes be conducted in association with classroom environment research for schools that have special needs students as part of their enrolment.

Recommendation 15 That small scale in-depth studies involving qualitative methods be conducted to tease out the reasons why students hold particular perceptions of the learning environment.

7.5 LIMITATIONS OF THE STUDY

Mindful of the discussion of internal and external validity in the methodology chapter of this thesis (see Section 3.4), the following limitations of the study are acknowledged.

1. The study was conducted in one school only and it was not a typical Catholic secondary school. The proportion of special needs students enrolled at the school make the school distinct from other general high schools. All students, teachers, learning support staff and parents were invited to take part in the study, so a sample of the population was not required. The findings of the study apply to this school only and cannot be generalised to any other school.

2. A limitation of the study relates to the instrumentation for the study. The results for the school environment are based on the instrument developed for the study. As outlined in Chapter 4 of this thesis, established psychometric procedures were followed in the development and validation of scales for the instrument. The study of classroom environment and student outcomes used an instrument based on previous tested and validated instruments as outlined in Chapter 4. However, it has to be acknowledged that the results generated from the use of these instruments can only be generalised for the population for which the instruments were validated.

3. A key limitation of the study relates to perceptual measures. Like much learning environment research, this study is based on individual perception. It is recognised that perceptual measures do not necessarily equate to reality. However, as discussed in Chapter 3 of this thesis, perceptual measures are important as individuals act on personal perceptions. In this way, a growing body of learning environment research continues to add weight to the relevance of the use of perceptual data when studying the predictors of student outcomes in educational settings.

4. There are statistical limitations to this study. Correlational analyses were conducted in this study and they cannot be used to infer causality. Chapter 3 provides an overview of the limitations of these types of analyses. For example, it cannot be assumed that positive student perceptions of some classroom environment scales will improve a student's academic efficacy. While path diagrams developed through the use of structural equation modelling provide the imagery of causation, they are based on correlation matrices. Accordingly, no causation can be implied. Causation can only be established through true experimental designs. As the quantitative results of this study are generalisable to one school, the applicability to the wider research community will provide starting points for further research. Replication studies are important for checking original results, especially if they impact heavily on theory and practice (Gersten, Lloyd, & Baker, 1998). A replication of this study in other schools providing for special needs students in the regular classroom would be highly desirable.

7.6 CONCLUDING REMARKS

Learning environment research has been conducted for over 30 years in many different countries and many studies have been reported (Dorman, 2003; Dorman et al., 2006; Fraser, 2003). This learning environment research has been coupled with research on student outcomes and relationships between learning environments and outcomes have been investigated (Phan, 2008). While much work has been done with regular students, special needs students have received little attention from researchers (Adams & Adams, 2000; Gersten et al., 1998). With attention being drawn to the educational needs of all children (Catholic Education Council of the Archdiocese of Brisbane, 2007; Centre for Educational Research and Innovation, 2004; Congregation for Catholic Education, 2002), it seemed opportune to examine the learning environment of a school that had taken on the task of educating special needs students in the regular classroom. Anecdotal evidence suggested this school was performing well for the students and this was the motivating factor for this research.

As literature on learning environment research had clearly defined two constructs, school environment and classroom environment (Fraser, 1995), it was decided to study both at the one school. Parents were included in the study of school environment as they had spent considerable time researching which school would be best for their children and they were

well aware of what each school had to offer before they made a choice of school. Student outcomes and the relationships between outcomes and classroom environment also became a focus of the research.

A significant outcome of the study was the development or modification of existing instruments to form context-specific instruments to assess parent and teacher perceptions of school environment and student and teacher perceptions of classroom environment and student outcomes in a Catholic inclusive school. The study has resulted in a number of recommendations for general learning research in an inclusive school and a more detailed understanding of student outcomes and how they are related to classroom environment. Replication of the study in this school or a similar institution would assist the development of shared understanding of learning environments in inclusive schools.

This study extends the scholarship and research of learning environments with special emphasis on education of special needs children. More importantly, the findings provide suggestions for ways of understanding and improving the educational processes for children who have special needs. The Catholic ethos of the school seemed to be well understood by parents and teachers. This school offers a sound, holistic education for all children irrespective of their needs and this has been recognised by parents, teachers and students.

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APPENDIX A

PARENT COMMENTS AT

PARENT-TEACHER INTERVIEWS

PARENT COMMENTS

Parent 1	The school is not a special school and it caters for the needs of all the students. We spent two years looking for a school for our child and we wanted a small school and a Catholic school.
Parent 2	It is a small school, has small classes, has more teacher contact and emphasised the basics. We have moved house a number of times and have always made sure there was transport for our son to come to this school. We let him know in Year 3 that he would be going to this school.
Parent 3	It is all about care….everyone cares for all the students.
Parent 4	It is all about relationships….student-teacher, office-parent. We have been impressed with the way the school operates. There is a lack of bullying and everyone is treated the same, like they are mainstream students.
Parent 5	The dignity of each person is recognised and easily seen. It is a small school. We spent two years looking for a suitable school for us. We need to find out more about Years 11 and 12 though.
Parent 6	The school fitted the student's needs and it is not a special school. The State Primary School recommended this school to us.

APPENDIX B

AUSTRALIAN CATHOLIC UNIVERSITY

ETHICS CLEARANCE DOCUMENT

Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

ACU National

Human Research Ethics Committee

Committee Approval Form

Principal Investigator/Supervisor: Associate Professor Jeffrey Dorman Brisbane Campus

Co-Investigators: Dr Joy Kennedy Brisbane Campus

Student Researcher: Mr Paul Kelly Brisbane Campus

Ethics approval has been granted for the following project:
The classroom and school environment of a small Catholic inclusive secondary school. (Student, parents and staff of the school)

for the period: 27 October 2008 to 30 November 2009

Human Research Ethics Committee (HREC) Register Number: Q200708 43

The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (2007) apply:

(i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
- security of records
- compliance with approved consent procedures and documentation
- compliance with special conditions, and

(ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
- proposed changes to the protocol
- unforeseen circumstances or events
- adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than low risk. There will also be random audits of a sample of projects considered to be of negligible risk and low risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

K. Pashley.

Signed: Date: 27 October 2008
(Research Services Officer, McAuley Campus)

(Committee Approval.dot @21/11/2007) Page 1 of 1

APPENDIX C

SCHOOL ENVIRONMENT DIMENSIONS AND

POSSIBLE SCHOOL ENVIRONMENT ITEMS

POSSIBLE ITEMS

Mission Consensus

The school mission statement and its associated goals are well understood by school staff.

The organisation of this school reflects its goals.

Teachers regularly refer to the mission of the school when addressing school issues.

There is a high degree of consensus within the staff with regard to what the school is trying to achieve.

In this school, students receive a sound preparation for a moral life.

My views of the overall mission of this school are very similar to other staff members.

This school is making a worthwhile contribution to the preparation of socially responsible adults.

Some teachers in this school could try harder at supporting the goals of the school.

The operation of this school is consistent with its goals.

Teachers agree on the school's overall goals.

Empowerment

The administration team deals with staff in a relational rather than authoritarian manner.

Teachers feel that they are authorised to make decisions in this school.

Actions by the administration team often support the view that teachers are the school's most important resource.

Staff efforts in this school are recognised by the administration team.

The administration team supports teachers on a consistent basis.

Decisions about the running of the school are usually made by the principal or a small group of teachers.

I have to refer even small matters to a senior member of staff for final answer.

Teachers are frequently asked to participate in decisions concerning administrative policies and procedures.

I am encouraged to make decisions without reference to a senior member of staff.

I have very little say in the running of the school.

Student Support

There are many disruptive, difficult students in the school

Most students are helpful and cooperative to teachers.

Most students are pleasant and friendly to teachers.

There are many noisy, badly behaved students.

Students get along well with teachers.

Most students are well-mannered and respectful to the school staff.

Very strict discipline is needed to control many of the students.

A variety of approaches to discipline are needed to accommodate various student disabilities

Students with problems are identified quickly.

Parents are contacted when there is a need for discussion about their student issues

Affiliation

I seldom receive encouragement from colleagues.

I feel accepted by other teachers.

I am ignored by other teachers.

I feel that I could rely on my colleagues for assistance if I should need it.

My colleagues seldom take notice of my professional views and opinions.

I feel that I have many friends among my colleagues at this school.

I often feel lonely and left out of things in the staffroom.

Teachers have the opportunity to mix socially at gatherings outside school hors.

Professional Interest

Teachers frequently discuss teaching methods and strategies with each other.

Teachers avoid talking with each other about teaching and learning.

Staff meetings are dominated by routine administrative matters rather than teaching and learning issues.

Many teachers attend inservice and other professional development courses.

Teachers show little interest in what is happening in other schools.

Teachers are keen to learn from their colleagues.

Teachers show considerable interest in the professional activities of their colleagues.

Staff is well trained to use resources and equipment confidently.

In-service training for new equipment and ICT is adequate.

Resource Adequacy

The school library has an adequate selection of books and periodicals.

The supply of equipment and resources is inadequate.

Video equipment, tapes and DVDs are readily available and accessible.

Adequate copying facilities and services are available to teachers.

TVs, computers and projectors are available when needed.

Facilities are inadequate for catering for a variety of classroom activities and learning groups of different sizes.

Electronic resources are available when needed.

Class sets of important resource books are available when needed.

Books, videotapes and equipment that the school does not own can be borrowed from external resource centres.

Technological support for ICT is adequate.

There are sufficient areas for meetings of groups of students, bigger than class groups.

There is sufficient room to store resources and equipment.

Work Pressure

There is constant pressure to keep working.

Teachers have to work long hours to complete all their work.

Teachers don't have to work very hard in this school.

There is no time for teachers to relax.

You can take it easy and still get the work done.

Seldom are there deadlines to meet.

It is hard to keep up with your work load.

Preparation and correction time is taken up with student issues

Holism

Parents are encouraged to be involved in the school.

Other professionals, including speech and occupational therapists, are involved in the school.

There is insufficient involvement of the other educational therapists in the school.

The school gives the students a well rounded education.

More options, such as music and drama, need to be provided for the students at this school.

Members of the outside community are encouraged to be involved in the school

There should be more involvement of the school with the outside community

Religion is considered an important subject in this school.

The study of religion is not necessary for the students at this school.

Students obtain adequate training in technology for the future.

School spirit and school pride is fostered adequately in the school.

Special Purpose

The school caters well for students with special needs.

The school needs to be more attentive to the needs of all the students.

The school is different to other schools in the way it educates its students.

The school does not put enough emphasis on the academic work of the students.

There are too many students with special educational needs at this school.

Very few students are left behind academically in their studies.

There needs to be more teachers with training in special education at the school.

Because of the vocational direction of the curriculum, the school prepares students well for the workforce.

APPENDIX D

SCHOOL ENVIRONMENT INSTRUMENT

AND LETTER

FOR STAFF

ACU National
Australian Catholic University
Brisbane Sydney Canberra Adelaide Ballarat Melbourne
Brisbane Campus (Mt Gravatt at Banyo)

1100 Nudgee Road Banyo Qld 4014

PO Box 456 Virginia Qld 4014 Australia

INFORMATION LETTER TO STAFF

TITLE OF PROJECT **The school environment of a small Catholic inclusive Secondary school.**

NAME OF PRINCIPAL SUPERVISOR: Associate Professor Jeff Dorman
STUDENT RESEARCHER: Mr. Paul Kelly
PROGRAMME IN WHICH ENROLLED: Doctor of Education

Dear Staff,

The staff of the College is to be invited to participate in a questionnaire about the school environment at this school. This letter is to ask you to consent to participate in this research project and completion of the question will be taken as your consent.

The aim of the project is to find out from staff their opinions of the school environment. Since it is your opinion that is being asked for, there are no right or wrong answers. There are 68 statements that require you to circle a number as your response which will take about 30 minutes during a staff meeting. Please place the completed survey in the box at the staff meeting. You are able to withdraw from it at any time before the questionnaire is submitted.

The research is being conducted as part of a doctoral study. Confidentiality will be maintained as there are no names collected with the questionnaires and only the combined data will be used. This information will be included in a thesis and it is hoped that the school will benefit from the results of this research by gaining a better understanding of how the working environment of this unique school is perceived by staff.

Any questions regarding this project should be directed to the Principal Supervisor or the Student Researcher

PRINCIPAL SUPERVISOR	STUDENT RESEARCHER
Associate Professor Jeffrey Dorman	Mr Paul Kelly
Telephone number 36237159	xxxx
School of Education	
1100 Nudgee Rd., Banyo 4014	

This study has been approved by the Human Research Ethics Committee at Australian Catholic University. In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Supervisor or Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee.
QLD:Chair, HREC
C/o Research Services, Australian Catholic University
Brisbane Campus
PO Box 456
Virginia QLD 4014
Tel: 07 3623 7429

Thank you for your time with this matter. Completion of the questionnaire will indicate your agreement to participate in this research project.

…… ……

Principal Supervisor Student Researcher

School Environment

Staff Questionnaire

Section A Background Information

Please fill in the appropriate circle

Sex Male 0 Female 0

Religion Catholic 0 Christrian 0 Non-christrian 0 No religion 0

Section B. This section contains statements about what could be happening in this school. You are asked to give your perceptions of how often each of these occurs in your school. There are no "right' or 'wrong' answers. Your opinion is what is wanted. Your response is confidential and the questionnaire is non-identifable.

Circle the number that best indicates your opinion.

		Almost never	Seldom	Some-times	Often	Almost always
1	The school mission statement and its associated goals are well understood by school staff.	1	2	3	4	5
2	In this school, students receive a sound preparation for a moral life.	1	2	3	4	5
3	There are many disruptive, difficult students in the school.	1	2	3	4	5
4	I seldom receive encouragement from colleagues.	1	2	3	4	5
5	Teachers frequently discuss teaching methods and strategies with each other.	1	2	3	4	5
6	The school library has an adequate selection of books and electronic resources.	1	2	3	4	5
7	Teachers have to work long hours to complete all their work.	1	2	3	4	5
8	Parents are encouraged to be involved in the school.	1	2	3	4	5
9	The school caters well for students with special needs	1	2	3	4	5
10	Teachers regularly refer to the mission of the school when addressing school issues.	1	2	3	4	5
11	Actions by the administration team often support the view that teachers are the school's most important resource.	1	2	3	4	5
12	There are many disruptive, difficult students in the school.	1	2	3	4	5
13	I feel accepted by other teachers.	1	2	3	4	5
14	Staff meetings are dominated by routine administrative matters rather than teaching and learning issues.	1	2	3	4	5
15	Video equipment, tapes and DVDs are readily available and accessible.	1	2	3	4	5
16	Teachers don't have to work very hard in this school.	1	2	3	4	5
17	Other professionals, including speech and occupational therapists, are involved in the school.	1	2	3	4	5
18	The school needs to be more attentive to the needs of all the students.	1	2	3	4	5
19	There is a high degree of consensus within the staff with regard to what the school is trying to achieve.	1	2	3	4	5
20	Staff efforts in this school are recognised by the administration team.	1	2	3	4	5
21	Most students are pleasant and friendly to teachers.	1	2	3	4	5
22	I am ignored by other teachers.	1	2	3	4	5

P2	Staff Questionnaire	Almost never	Seldom	Some-times	Often	Almost always
23	Many teachers attend inservice and other professional development courses.	1	2	3	4	5
24	Adequate copying facilities are available to teachers.	1	2	3	4	5
25	There is no time for teachers to relax.	1	2	3	4	5
26	There is insufficient involvement of the other educational therapists in the school.	1	2	3	4	5
27	The school is different to other schools in the way it educates its students.	1	2	3	4	5
28	In this school, students receive a sound preparation for a moral life	1	2	3	4	5
29	The administration team supports teachers on a consistent basis.	1	2	3	4	5
30	Students get along well with teachers.	1	2	3	4	5
31	I feel that I could rely on my colleagues for assistance if I should need it	1	2	3	4	5
32	Teachers show little interest in what is happening in other schools.	1	2	3	4	5
33	TVs, computers and data projectors are available when needed.	1	2	3	4	5
34	You can take it easy and still get the work done.	1	2	3	4	5
35	The school gives the students a well rounded education.	1	2	3	4	5
36	The school does not put enough emphasis on the academic work of the students.	1	2	3	4	5
37	My views of the overall mission of this school are very similar to other staff members.	1	2	3	4	5
38	Decisions about the running of the school are usually made by the principal or a small group of teachers.	1	2	3	4	5
39	Very strict discipline is needed to control many of the students.	1	2	3	4	5
40	My colleagues seldom take notice of my professional views and opinions	1	2	3	4	5
41	Teachers are keen to learn from their colleagues.	1	2	3	4	5
42	Facilities are inadequate for catering for a variety learning groups of different sizes.	1	2	3	4	5
43	Seldom are there deadlines to meet.	1	2	3	4	5
44	More options, such as music and drama, need to be provided for the students at this school.	1	2	3	4	5
45	There are too many students with special educational needs at this school.	1	2	3	4	5
46	This school is making a worthwhile contribution to the preparation of socially responsible adults.	1	2	3	4	5
47	I have to refer even small matters to a senior member of staff for final answer.	1	2	3	4	5
48	A variety of approaches to discipline are needed to accommodate various student disabilities.	1	2	3	4	5
49	I feel that I have many friends among my colleagues at this school.	1	2	3	4	5
50	Teachers show considerable interest in the professional activities of their colleagues.	1	2	3	4	5
51	Technological support for ICT is adequate.	1	2	3	4	5

P3	Staff Questionnaire	Almost never	Seldom	Some-times	Often	Almost always
52	It is hard to keep up with your work load.	1	2	3	4	5
53	Members of the outside community are encouraged to be involved in the school	1	2	3	4	5
54	Very few students are left behind academically in their studies.	1	2	3	4	5
55	Some teachers in this school could try harder at supporting the goals of the school.	1	2	3	4	5
56	Teachers are frequently asked to participate in decisions concerning administrative policies and procedures.	1	2	3	4	5
57	Parents are contacted when there is a need for discussion about their student issues.	1	2	3	4	5
58	Teachers have the opportunity to mix socially at gatherings outside school hours.	1	2	3	4	5
59	Staff is well trained to use resources and equipment confidently.	1	2	3	4	5
60	Suitable computer software is available for teachers and students.	1	2	3	4	5
61	Preparation and correction time is taken up with student issues.	1	2	3	4	5
62	There should be more involvement of the school with the outside community.	1	2	3	4	5
63	There needs to be more teachers with training in special education at the school.	1	2	3	4	5
64	Religion is considered an important subject in this school	1	2	3	4	5
65	Because of the vocational direction of the curriculum, the school prepares students well for the workforce.	1	2	3	4	5
66	The study of religion is not necessary for the students at this school.	1	2	3	4	5
67	Students obtain adequate training in technology for the future.	1	2	3	4	5
68	School spirit and school pride is fostered adequately in the school.	1	2	3	4	5

Thank you for your assistance in completing this questionnaire

APPENDIX E

SCHOOL ENVIRONMENT INSTRUMENT

AND LETTER FOR PARENTS

ACU National
Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne
Brisbane Campus (McAuley at Banyo)

1100 Nudgee Road Banyo Qld 4014

PO Box 456 Virginia Qld 4014 Australia

INFORMATION LETTER TO PARENTS

TITLE OF PROJECT: **The Classroom and School Environment of a small Catholic inclusive secondary school**

NAME OF SUPERVISOR: Associate Professor Jeff Dorman

STUDENT RESEARCHER: Mr. Paul Kelly

PROGRAMME IN WHICH ENROLLED: Doctor of Education

Dear Parents/guardians,

This letter is to invite you and your child to participate in a research project at school.

The research project investigates both your child's perceptions of the classroom environment and your perception of the whole school environment.

For the children this will involve them answering a questionnaire about what happens in their classroom. It is their opinion that is being asked for and there are no right or wrong answers. They are able to ask any questions about the questionnaire and it is not part of any assessment. The questionnaire will require the students to circle numbers as their responses and no written answers are required. The survey will take about forty minutes of one lesson and the only inconvenience would be length of the survey which will have 53 statements in it. This should not present any problem for the students who will have the help of the teachers and the learning support personnel.

For you, the research will involve responding to a questionnaire about the whole school environment which will take about fifteen minutes. This letter is to ask you for your consent for your child and for you to participate in this research project. The aim of the project is to find out from parents/guardians their opinions of the school environment and, since it is their opinion that is being asked for, there are no right or wrong answers. You are able to withdraw from it at any time before the questionnaire is submitted.

The research is being conducted as part of a doctoral study. Confidentiality will be maintained at all times and no names will be collected with the questionnaires. This information will be included in a thesis and it is hoped that the school will benefit from the results of this research by gaining a better understanding of how the school is perceived by the parents of its students.

The research project will give information to the school that will be beneficial to the normal classroom environment in the years to come. All the data collected will be non-identifiable and it will be part of a thesis and may be published in an educational journal. The children's completed surveys will be collected by the class teacher and I request that you return your completed survey in the enclosed envelope to the school.

You are free to refuse consent for your child or yourself to participate without any consequences. Any questions regarding this project should be directed to the Principal Supervisor or the Student Researcher.

Principal Supervisor
Associate Professor Jeffrey Dorman
Telephone number 36237159
School of Education
1100 Nudgee Rd., Banyo 4014

Student Researcher
Mr Paul Kelly

xxxx

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Principal Supervisor or Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee, care of the nearest branch of the Research Services Unit.
QLD: Chair, HREC, C/o Research Services
Australian Catholic University, Brisbane Campus
PO Box 456, Virginia QLD 4014
Tel: 07 3623 7429

Thank you for your time in reading this letter and I ask that you complete the consent forms and keep one for your own records and return the other to the school.

_____ _____

Principal Supervisor Student Researcher

School Environment

Parent Questionnaire

Section A Background Information				
Please fill in the appropriate circle				
Sex	Male 0	Female 0		
Religion	Catholic 0	Christian 0	Non-Christian 0	No religion 0

Section B. This section contains statements about what could be happening in this school. You are asked to give your perceptions of how often each of these occurs in your school. There are no "right' or 'wrong' answers. Your opinion is what is wanted. Your response is confidential and the questionnaire is non-identifiable. Circle the number that best indicates your opinion.

		Almost never	Seldom	Some-times	Often	Almost always
1	The school mission statement and its associated goals are well understood by school staff.	1	2	3	4	5
2	Parents are encouraged to be involved in the school.	1	2	3	4	5
3	The school caters well for students with special needs	1	2	3	4	5
4	Teachers regularly refer to the mission of the school when addressing school issues.	1	2	3	4	5
5	Other professionals, including speech and occupational therapists, are involved in the school.	1	2	3	4	5
6	The school needs to be more attentive to the needs of all the students.	1	2	3	4	5
7	There is a high degree of consensus within the staff with regard to what the school is trying to achieve.	1	2	3	4	5
8	There is insufficient involvement of the other educational therapists in the school.	1	2	3	4	5
9	The school is different to other schools in the way it educates its students.	1	2	3	4	5
10	In this school, students receive a sound preparation for a moral life	1	2	3	4	5
11	The school gives the students a well rounded education.	1	2	3	4	5
12	The school does not put enough emphasis on the academic work of the students.	1	2	3	4	5
13	More options, such as music and drama, need to be provided for the students at this school.	1	2	3	4	5
14	There are too many students with special educational needs at this school.	1	2	3	4	5

		Almost never	Seldom	Some-times	Often	Almost always
15	This school is making a worthwhile contribution to the preparation of socially responsible adults.	1	2	3	4	5
16	Members of the outside community are encouraged to be involved in the school	1	2	3	4	5
17	Very few students are left behind academically in their studies.	1	2	3	4	5
18	There should be more involvement of the school with the outside community.	1	2	3	4	5
19	There needs to be more teachers with training in special education at the school.	1	2	3	4	5
20	Religion is considered an important subject in this school	1	2	3	4	5
21	Because of the vocational direction of the curriculum, the school prepares students well for the workforce.	1	2	3	4	5
22	The study of religion is not necessary for the students at this school.	1	2	3	4	5
23	Students obtain adequate training in technology for the future.	1	2	3	4	5
24	School spirit and school pride is fostered adequately in the school.	1	2	3	4	5
25	Some teachers in this school could try harder at supporting the goals of the school.	1	2	3	4	5
	Thank you for your assistance in completing this questionnaire					

APPENDIX F

CLASSROOM ENVIRONMENT INSTRUMENT

AND LETTER FOR STAFF

ACU National
Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

1100 Nudgee Road Banyo Qld 4014

PO Box 456 Virginia Qld 4014 Australia
Telephone: **3623 7159**
Facsimile: **3623 7247**

INFORMATION LETTER TO STAFF

TITLE OF PROJECT **The classroom environment of a small Catholic inclusive Secondary school**

NAME OF SUPERVISOR: Associate Professor Jeff Dorman
STUDENT RESEARCHER: Mr. Paul Kelly
PROGRAMME IN WHICH ENROLLED: Doctor of Education

Dear staff,

You are invited to participate in this questionnaire about the classroom environment of your classes at xxxx College. This is part of a research project to find the opinions of the staff about how they see the activities of the classroom unfold. Since it is your opinion that is being asked, there are no right or wrong answers. There are 47 statements in the survey that require a number to be circled as the response to the statement. It should take no more than 30 minutes to complete. By completing this questionnaire you are agreeing to participate in this project. You are free to refuse consent altogether without having to justify that decision, or to withdraw consent and discontinue participation in the study at any time, before the questionnaire is submitted, without giving a reason. Please place the completed survey in the marked box in the school office.

The research is being conducted as part of a doctoral study. Confidentiality will be maintained as no names will be collected with the questionnaire and only the combined data from the respondents will be used. This information will be included in a thesis and it is hoped that the school will benefit from the results of this research by gaining a better understanding of how the staff consider the classroom practices.

Any questions regarding this project should be directed to the Principal Supervisor or the Student Researcher

PRINCIPAL SUPERVISOR
Associate Professor Jeffrey Dorman
Telephone number 36237159
School of Education
1100 Nudgee Rd., Banyo. 4014

STUDENT RESEARCHER
Mr Paul Kelly

xxxx College

This study has been approved by the Human Research Ethics Committee at Australian Catholic University. In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Supervisor or Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee.

QLD: Chair, HREC
C/o Research Services, Australian Catholic University
Brisbane Campus
PO Box 456
Virginia QLD 4014
Tel: 07 3623 7429

Thank you for your time with this matter. Completion of the questionnaire will be your acceptance of the invitation to participate in this research project.

…… ……

Principal Supervisor Student Researcher

CLASSROOM ENVIRONMENT
TEACHER QUESTIONNAIRE

Section A

Background Information. Please circle the correct answer. Year Level. 8 9 10 11 12 Sex M F
Religion Catholic Christian Non-Christian Position Teacher Learning support

Section B

This section contains statements about what could be happening in this classroom. You are asked to give your opinion of how often each of these things might happen in this classroom. There are no 'right' or 'wrong' answers'. It is your opinion that is needed. Your answers are confidential.
Please circle the number that best indicates your opinion.

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	The students make friends among other students in this class.	1	2	3	4	5
2	Members of the class are friends with others in the class.	1	2	3	4	5
3	Students work well with other class members.	1	2	3	4	5
4	Students help other class members who are having trouble with their work.	1	2	3	4	5
5	Students in this class liked by other class members.	1	2	3	4	5
6	I goes out of my way to help the students.	1	2	3	4	5
7	I consider the students' feelings.	1	2	3	4	5
8	I talk with the students.	1	2	3	4	5
9	I move about the class to talk with the students.	1	2	3	4	5
10	My questions help the student to understand.	1	2	3	4	5
11	Students discuss ideas in class.	1	2	3	4	5
12	Students give their opinions during class discussions.	1	2	3	4	5
13	Students' ideas and suggestions are used during classroom discussions.	1	2	3	4	5
14	Students explain their ideas to other students.	1	2	3	4	5
15	Students are asked to explain how they solve problems.	1	2	3	4	5
16	Getting a certain amount of work done is important to the students.	1	2	3	4	5
17	Students do as much as they set out to do.	1	2	3	4	5
18	Students know the goals for this class.	1	2	3	4	5
19	Students know what they are trying to accomplish in this class.	1	2	3	4	5
20	Students try to understand the work in this class.	1	2	3	4	5
21	Students carry out investigations to test their ideas.	1	2	3	4	5
22	Students carry out investigations to answer questions coming from discussions	1	2	3	4	5
23	Students carry out investigations to answer questions that puzzle them.	1	2	3	4	5
24	Students carry out investigations to answer the teacher's questions.	1	2	3	4	5
25	Students solve problems by using information obtained from their own investigations.	1	2	3	4	5
26	Students cooperate with other students when doing assignment work.	1	2	3	4	5
27	When students work in groups in this class, there is teamwork.	1	2	3	4	5

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
28	Students work with other students this class.	1	2	3	4	5
29	Students cooperate with other students on class activities.	1	2	3	4	5
30	Students work together to achieve class goals.	1	2	3	4	5
31	I give as much attention to each student's questions as to other students' questions.	1	2	3	4	5
32	I treat each student the same as other students in this class.	1	2	3	4	5
33	All students receive the same encouragement from me as other students do.	1	2	3	4	5
34	A student's work receives as much praise as other students' work	1	2	3	4	5
35	Students get the same opportunity to answer questions as other students.	1	2	3	4	5
36	I think mistakes are okay as long as the students are learning.	1	2	3	4	5
37	I want students to understand the work, not just memorise it.	1	2	3	4	5
38	I really want students to enjoy learning new things	1	2	3	4	5
39	I recognise students for trying hard.	1	2	3	4	5
40	I give students time to really explore and understand new ideas.	1	2	3	4	5
41	I point out students who get good grades to all students as an example to all.	1	2	3	4	5
42	I let students know which student gets the highest scores on a test.	1	2	3	4	5
43	I tell students how they compare to other students.	1	2	3	4	5
44	I tell students that it is important that they don't look stupid in class.	1	2	3	4	5
45	I say to students that showing other students that they are not bad at class work should be their goal	1	2	3	4	5
46	I tell students it is important to join in discussions and answer questions so it doesn't look like they can't do the work.	1	2	3	4	5
47	I tell students it is important to answer questions in class, so it doesn't look like they can't do the work.	1	2	3	4	5

Thank you for your assistance in completing this questionnaire

APPENDIX G

CLASSROOM ENVIRONMENT INSTRUMENT

AND LETTER FOR STUDENT PARTICIPATION

ACU National
Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne
Brisbane Campus (McAuley at Banyo)

1100 Nudgee Road Banyo Qld 4014

PO Box 456 Virginia Qld 4014 Australia

PARENT/GUARDIAN CONSENT FORM

TITLE OF PROJECT: The classroom and school environment of a small Catholic school

PRINCIPAL SUPERVISOR: Associate Professor Jeffrey Dorman

STUDENT RESEARCHER: Mr. Paul Kelly

I ..... (*the parent/guardian*) have read and understood the information provided in the Letter to the Participants. Any questions I have asked have been answered to my satisfaction. I agree that my child, nominated below, may participate in this activity of answering a questionnaire consisting of 52 statements, realising that I can withdraw my consent at any time before the questionnaire is submitted without comment or penalty. I also give my consent to participate in the research. I agree that research data collected for the study may be published or may be provided to other researchers in a form that does not identify my child or myself in any way.

NAME OF PARENT/GUARDIAN: ……

SIGNATURE .....……..…DATE:……..

NAME OF CHILD …….

SIGNATURE OF PRINCIPAL INVESTIGATOR: ……

DATE:.....

SIGNATURE OF STUDENT RESEARCHER:……..

DATE: ……

ASSENT OF PARTICIPANTS AGED UNDER 18 YEARS

I …… (*the participant aged under 18 years*) understand what this research project is designed to explore. What I will be asked to do has been explained to me. I agree to take part in answering the questionnaire of 52 statements realising that I can withdraw at any time before the questionnaire is collected without having to give a reason for my decision.

NAME OF PARTICIPANT AGED UNDER 18:_____

SIGNATURE: _____DATE:_____

SIGNATURE OF PRINCIPAL SUPERVISOR:_____DATE:_____

SIGNATURE OF STUDENT RESEARCHER:_____DATE:_____

ACU National
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INFORMATION TO PARTICIPANTS

TITLE OF PROJECT: **The classroom environment at xxxx College**

PRINCIPAL SUPERVISOR: Professor Jeffrey Dorman
STUDENT RESEARCHER: Mr Paul Kelly
PROGRAMME IN WHICH ENROLLED: …Doctor of Education

Dear Participant,

This survey is to find out your views on how the classroom works in this school. There are no right or wrong answers and it is your opinion only that is requested.

The survey requires you to circle the number that best fits your response, so there is no writing involved. Since there are fifty two questions, the survey will take the lesson to complete. You are able to ask any questions about the meaning of the statements that you may need to ask.

The results of this survey are part of a Doctor of Education study. The results may be published in an academic journal but no individual results will be able to be recognised. The importance of the study will be for the wider education community and for this school in the years to come.

Since you have been invited to join in the answering of this survey you are also allowed to withdraw from it at any time before the questionnaire is collected without having to justify that decision and there are no consequences of withdrawing. Your teacher will give you instructions of what you will do instead of the survey.

Any questions regarding this project should be directed to the Principal Supervisor or to the Student Researcher

PRINCIPAL SUPERVISOR
Associate Professor Jeffrey Dorman
Telephone number 36237159
School of Education
1100 Nudgee Rd., Banyo 4014

STUDENT RESEARCHER
Mr Paul Kelly
Telephone number
xxxx College

This study has been approved by the Human Research Ethics Committee at Australian Catholic University. In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Principal Supervisor or Student Researcher has (have) not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee, care of the nearest branch of the Research Services Unit.
QLD:Chair, HREC., C/o Research Services
Australian Catholic University
Brisbane Campus
PO Box 456
Virginia QLD 4014
Tel: 07 3623 7429

_____ _____
Principal Supervisor Student researcher

CLASSROOM ENVIRONMENT
STUDENT QUESTIONNAIRE

Section A

Background Information. Please circle the correct answer. Year Level. 8 9 10 11 12 Sex M F
Age __ years Religion Catholic Christian Non-Christian

Section B

This section contains statements about what could be happening in this classroom. You are asked to give your opinion of how often each of these things might happen in this classroom. There are no 'right' or 'wrong' answers'. It is your opinion that is needed. Your answers are confidential.
Please circle the number that best indicates your opinion.

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	I make friends among students in this class.	1	2	3	4	5
2	Members of the class are my friends.	1	2	3	4	5
3	I work well with other class members.	1	2	3	4	5
4	I help other class members who are having trouble with their work.	1	2	3	4	5
5	Students in this class like me.	1	2	3	4	5
6	The teacher goes out of his/her way to help me.	1	2	3	4	5
7	The teacher considers my feelings.	1	2	3	4	5
8	The teacher talks with me.	1	2	3	4	5
9	The teacher moves about the class to talk with me.	1	2	3	4	5
10	The teacher's questions help me to understand.	1	2	3	4	5
11	I discuss ideas in class.	1	2	3	4	5
12	I give my opinions during class discussions	1	2	3	4	5
13	My ideas and suggestions are used during classroom discussions.	1	2	3	4	5
14	I explain my ideas to other students.	1	2	3	4	5
15	I am asked to explain how I solve problems.	1	2	3	4	5
16	Getting a certain amount of work done is important to me.	1	2	3	4	5
17	I do as much as I set out to do.	1	2	3	4	5
18	I know the goals for this class.	1	2	3	4	5
19	I know what I am trying to accomplish in this class.	1	2	3	4	5
20	I try to understand the work in this class.	1	2	3	4	5
21	I carry out investigations to test my ideas.	1	2	3	4	5
22	I carry out investigations to answer questions coming from discussions	1	2	3	4	5
23	I carry out investigations to answer questions that puzzle me.	1	2	3	4	5
24	I carry out investigations to answer the teacher's questions.	1	2	3	4	5
25	I solve problems by using information obtained from my own investigations.	1	2	3	4	5
26	I cooperate with other students when doing assignment work.	1	2	3	4	5
27	When I work in groups in this class, there is teamwork.	1	2	3	4	5
28	I work with other students this class.	1	2	3	4	5
29	I cooperate with other students on class activities.	1	2	3	4	5
30	Students work with me to achieve class goals.	1	2	3	4	5

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
31	The teacher gives as much attention to my questions as to other students' questions.	1	2	3	4	5
32	I am treated the same as other students in this class.	1	2	3	4	5
33	I receive the same encouragement from the teacher as other students do.	1	2	3	4	5
34	My work receives as much praise as other students' work	1	2	3	4	5
35	I get the same opportunity to answer questions as other students.	1	2	3	4	5
36	My teacher thinks mistakes are okay as long as we are learning	1	2	3	4	5
37	My teacher wants us to understand our work, not just memorise it.	1	2	3	4	5
38	My teacher really wants us to enjoy learning new things	1	2	3	4	5
39	My teacher recognises us for trying hard.	1	2	3	4	5
40	My teacher gives us time to really explore and understand new ideas.	1	2	3	4	5
41	My teacher points out those students who get good grades as an example to all of us.	1	2	3	4	5
42	My teacher lets us know which students get the highest scores on a test.	1	2	3	4	5
43	My teacher tells us how we compare to other students.	1	2	3	4	5
44	My teacher tells us that it is important that we don't look stupid in class.	1	2	3	4	5
45	My teacher says that showing others that we are not bad at class work should be our goal	1	2	3	4	5
46	My teacher tells us it is important to join in discussions and answer questions so it doesn't look like we can't do the work.	1	2	3	4	5
47	My teacher tells us it is important to answer questions in class, so it doesn't look like we can't do the work.	1	2	3	4	5
48	I'm certain I can master the skills taught in class this year.	1	2	3	4	5
49	I'm certain I can figure out how to do the most difficult class work.	1	2	3	4	5
50	I can do almost all the work in class if I don't give up.	1	2	3	4	5
51	Even if the work is hard, I can learn it.	1	2	3	4	5
52	I can do even the hardest work in this class if I try.	1	2	3	4	5

Thank you for your assistance in completing this questionnaire