

An Investigation into Students' Perceptions of Multicultural Classroom
Environments in Queensland Catholic Secondary Schools

Submitted by

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Statement of Sources

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

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This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

All research procedures reported in this thesis received the approval of the relevant Ethics/Safety committee.

Abstract

Australia continues to become culturally diverse. This diversity is being witnessed in Catholic schools. This thesis reports research which employed quantitative data collection methods in investigating students' perceptions of their multicultural classroom environment. By drawing on Catholic school literature, multicultural literature, previous learning environment research and the perceptions of stakeholders, an instrument, known as the Multicultural Classroom Environment Instrument (MCEI), was developed to assess psychosocial dimensions of classroom environments in Queensland Catholic secondary schools. These dimensions were: Collaboration, Competition, Teacher Authority, Teacher Support, Congruence, Deference, Teacher Directedness and Gender Equity. The use of the instrument with a sample of 1,460 students in 24 Catholic secondary schools in Queensland revealed some statistically significant differences in students' perceptions of their classroom environment. Differences were revealed according to the country of birth of the student and those of the parents. Investigations examining school type, subject, year level and gender were also undertaken. Single-sex schools were shown to be more concerned with Teacher Authority and Competition compared to coeducational schools. Religion and Study of Religion classes were perceived as very similar, irrespective of school type. There were differences in students' perception of the classroom environment across different year levels, with year 8 students' perceptions significantly different to that of years 10 and 12 students. Girls generally perceived their classroom environment more positively than boys, with greater Collaboration, Teacher Support and Gender Equity and less Competition and Teacher Authority. The results of this thesis suggest that differences in students' perceptions of multicultural classroom environments in Queensland Catholic secondary schools do exist. It also suggests that in order to continue to provide quality education, Catholic schools must acknowledge these differences. They must also ensure that curriculum initiatives, staff professional development and training, and other educational and pastoral initiatives are designed to incorporate the differences identified in this thesis. Further investigation into a variety of multicultural classroom environments is recommended.

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CHAPTER 1

AN OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This thesis reports research into multicultural classroom environments in Catholic secondary schools. The focus of the study was the *psychosocial* environment that students encounter in their classroom. Psychosocial environment refers to those aspects of the environment that have social bearing either in origin or outcomes (Boy & Pine, 1988). Therefore, the focus was the psychological meaning of classroom events. The study elicited feedback from students regarding their perceptions of the atmosphere, tone or climate of their multicultural classroom environment.

This study builds upon the existing pool of research into the area of classroom environments. It uses, as its basis, the internationally recognised work of researchers including Fraser (1994), and Fraser and Walberg (1991). This study has utilised the techniques of developing, validating and administering an instrument for assessing students' perceptions of their classroom environments. It has used the works of Fraser (1990), Fraser, McRobbie and Giddings (1993), Moos (1979), Rentoul and Fraser (1983), Waldrip (1996), and Waldrip and Giddings (1997) as its basis. It has also further investigated the works of researchers such as Anderson & Walberg (1972), and Walberg (1969) in examining determinants such as gender, year level, school type and country of birth. Finally this study examines the effect of cultural background on the perception of the classroom environment. The work of Smith (1972), Marjoribanks (1979), Fisher and Waldrip (1996), Giddings and Waldrip (1993, 1995), Waldrip (1996), and Waldrip and Giddings (1997) were used as a foundation for this aspect of the current research. It must be emphasised at this stage that this study used the existing and extensive pool of research that has been conducted across a variety of areas as previously outlined. However, this research is distinctive in that it combines a number of different research areas such as learning environments, Catholic schools and multicultural education, which previously have been independently researched.

The following sections of this chapter provide an overview of this thesis. Section 1.2 details the research problem and associated research questions. Section 1.3 discusses the rationale for the study by raising three fundamental issues: context of the study to the culturally diverse contemporary Australian society; relevance of the study to Australian Catholic schools; and importance of multicultural learning environments in Catholic schools. The significance of the study will be examined in Section 1.4. Section 1.5 introduces the research design and structure of the study. Section 1.6 details the research setting and Section 1.7 outlines the structure of this thesis and previews the remaining six chapters of this thesis.

1.2 THE RESEARCH PROBLEM AND RESEARCH DESIGN

1.2.1 The Research Problem

The study focuses on the investigation and assessment of students' perceptions of multicultural classroom environments in Queensland Catholic secondary schools.

1.2.2 Research Questions

A total of eight research questions were investigated in this study:

1. What are the key characteristics of multicultural classroom environments in Catholic schools?
2. To what extent do Catholic secondary school students from different cultures differ in their perceptions of their classroom environment?
3. To what extent do multicultural classroom environments in different types of Catholic schools (i.e. Boys', Girls' and Coeducational) differ?
4. To what extent do multicultural classroom environments of Religion and Study of Religion classes in Catholic schools differ?

5. To what extent are the differences between multicultural classroom environments in Religion and Study of Religion classes similar for Boys', Girls' and Coeducational Catholic schools?
6. To what extent do multicultural classroom environments of Years 8, 10 and 12 classes in Catholic schools differ?
7. To what extent are the differences between multicultural classroom environments in Years 8, 10 and 12 classes similar for the Boys', Girls' and Coeducational Catholic schools?
8. To what extent do multicultural classroom environments in Catholic schools differ for male and female students?

It is important to note that, because of the general nature of Questions 2, 7 and 8, more specific sub-questions were formulated. Thus three specific sub-questions of Question 2 were investigated:

- | | |
|--------------|---|
| Question 2.1 | To what extent do Catholic secondary school students who are themselves from different cultures differ in their perceptions of their classroom environment? |
| Question 2.2 | To what extent do Catholic secondary school students whose fathers are from different cultures differ in their perceptions of their classroom environment? |
| Question 2.3 | To what extent do Catholic secondary school students whose mothers are from different cultures differ in their perceptions of their classroom environment? |

Similarly, Question 7 had three associated sub-questions:

- | | |
|--------------|---|
| Question 7.1 | For Coeducational schools, to what extent does year level influence students' perceptions of their multicultural classroom environment? |
|--------------|---|

Question 7.2 For Boys' schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?

Question 7.3 For Girls' schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?

Similarly, Question 8 had three associated sub-questions:

Question 8.1 For Coeducational schools, to what extent do multicultural classroom environments differ for male and female students?

Question 8.2 For single-sex schools, to what extent do multicultural classroom environments differ for male and female students?

Question 8.3 Irrespective of school type, to what extent do multicultural classroom environments differ for male and female students?

In summary, the research questions investigate students' perceptions of their multicultural classroom environments taking into account different dependent variables such as school type, year level, subject type, gender and country of birth.

1.3 RATIONALE FOR THE STUDY

This section discusses the rationale for the study by considering three fundamental principles:

1. The context of the study to the culturally diverse contemporary Australian society.
2. The relevance of the study to Australian Catholic schools.

3. The importance of multicultural learning environments in Catholic schools.

1.3.1 Context of the Study to the Culturally Diverse Contemporary Australian Society

The issue of cultural diversity in Australia is not a new phenomenon. Before European settlement, the continent was inhabited by Aboriginal groups, each with their own distinct and different language and cultures. European settlement brought further diversification of Australian society. This trend has continued to the present day. Australia is currently more culturally diverse than ever before with a marked increase in students from non-English speaking backgrounds entering the educational system (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Cultural diversity is a term that describes the cultural and linguistic diversity of the Australian society. It recognizes that Australia is, and will remain, a culturally diverse country. It is a term used to describe public policies that manage the consequences of the diversity in the interests of the individual and society as a whole (Australian Department of Immigration and Multicultural Affairs, 2001).

Since the end of World War II, Australia has continued to diversify culturally. The Australian government has introduced and modified policies to adjust to this cultural diversification. As Minister for Immigration in the Whitlam Labor government, Al Grassby, in 1973, unveiled the government's Immigration programs in an address titled, '*A Multicultural Society for the Future*' (Galligan & Roberts, 2003). The Australian Government drafted the report *Australia as a Multicultural Society* in 1977, whilst the report, *Multiculturalism and its Implications for Immigration Policy* was released in 1979. The Galbally Report, *Migrant Services and Programs*, was produced in 1978 and embraced multiculturalism and recommended the consolidation and expansion of a raft of welfare and education services for migrants.

The Australian Institute of Multicultural Affairs Act was passed in 1979. Its objective was to raise awareness of cultural diversity and promote social cohesion, understanding and tolerance. In 1982, the Ethnic Affairs Taskforce report,

Multiculturalism for all Australians: our Developing Nationhood was released and put multiculturalism at the heart of Australia's nationhood and national identity. By 1987 the Office of Multicultural Affairs had been established by the then Labor government to replace the Australian Institute of Multicultural Affairs. The National Multicultural Advisory Council was established in 1994 and later launched *The National Multicultural Advisory Council Report*. The National Multicultural Advisory Council produced a report, *Australian Multiculturalism for a new century: Towards Inclusiveness*, which was launched by the Prime Minister, Mr. John Howard, on 5 May 1999. In response, the Australian government launched its multicultural policy statement, *A New Agenda for Multicultural Australia*, on 9 December 1999 and established the Council for Multicultural Australia in July 2000 to implement the policy (Galligan & Roberts, 2003). This document highlighted that, in order for multiculturalism to be a unifying force for the nation, it needs to be inclusive. That is, multiculturalism is about and for all Australians.

The evolution of multicultural policies in Australia has been rapid and diverse. It is important to recognise that in Australian society there is a common thread, namely the acceptance by all communities, however diverse, of values such as democracy, privacy and an equality of opportunity in areas of education and economic activity (Council of Multicultural Affairs, 2005).

In examining the issue of education in a culturally diverse society, an investigation of the purposes of education in such a society must be made. Cultural diversity is a question of attitude, behaviour and a state of mind which enables people to live in a culturally diverse society, to share its values and be able to mix in a positive and constructive way (Hamilton & Moore, 2004).

Another issue that needed consideration has been the increase in the number of school aged immigrants. In 2001, approximately 30% of people arriving from overseas were school aged students (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Another educational issue to consider is the provision of assistance for children whose parents wish them to preserve their cultural heritage. It is important to develop educational programs which encourage sensitivity to and, respect for, the differing cultures within Australian society, and to provide assistance to school age

children born in Australia into non-English speaking families who require assistance in learning English as a second language. Language, specifically the inability to speak English, is a significant barrier to children arriving in Australia from overseas countries (Beebe, 1983; Dhindsa & Fraser, 2003; Ryan, 2000).

In addition to the increase in the number and cultural diversity of the students arriving in Australia and therefore entering the Australian education system, there is the issue that approximately one fifth are refugees (Department of Immigration and Multicultural and Indigenous Affairs, 2003). The education of these students and their adaptation to a new country following often-traumatic experiences poses special problems (Hamilton & Moore, 2004).

Education for a culturally diverse society embodies an educational philosophy that requires an expressive educational policy. Therefore all levels of the formal education system have an obligation to promote and teach programs based on the belief that various cultures represented within the Australian population have something of value to share with others, and something of value to learn from others. In particular this means that the organisational structure of schools and the educational programs and activities offered should encourage the development and maintenance of the student's self esteem and personal identity, while at the same time offering the opportunity for the student to understand and appreciate the cultural patterns other than their own (Committee on Multicultural Education, 1979). Australia is and will remain a culturally diverse society. An understanding, tolerance and appreciation of the diverse cultures that exist within Australian society is imperative to the future of this country and its people.

1.3.2 Relevance of the Study to Australian Catholic Schools

The most fundamental point concerning this study of Catholic secondary schools in Queensland is that all Catholic schools are agents of the Catholic church. It follows that they are empowered to provide an education for their students that is distinctive because of their Christ-centredness. The establishment of an atmosphere that is consistent with a Christian view of the world is a key issue for all Catholic schools. Over the past three

decades, significant changes in the staffing composition of Australian Catholic schools have occurred with teaching religious orders replaced almost entirely by lay teachers. The issue of a Catholic school having a *Catholic identity*, taken for granted in the past, has assumed great importance to contemporary Catholic education. If this identity cannot be discerned, then a Catholic school has no justification for its existence. A Catholic school cannot be a school first and Catholic second. The two concepts are inseparable (O'Gorman, 1987).

It is reasonable to believe that Catholic schools cannot teach Catholic Christianity if the atmosphere enveloping the school is devoid of a Catholic ethos. Leavey's (1972) seminal Australian research in Catholic secondary girls' schools concluded that "Unless the students' experience of the procedures of their school is reinforcing the content of the Christian message, then that message tends not to be accepted" (Leavey, 1972, p. 343). There is almost universal agreement within Catholic education that Catholic schools must demonstrate their Christian commitment by having an appropriate learning environment. Bathersby, the present Archbishop of Brisbane, asserted:

It would be a complete misunderstanding to see the Catholic school just as any other, with a daily religion lesson added. Important as the religion program is, it is only part of the difference. The whole atmosphere of the school is one of shared faith where parents, teachers and students come together in prayer and action to live the Gospel of Jesus. For the young, the witnesses of faith-filled adults, teachers and parents, provide a lesson and encouragement that no text book can replace.

(Bathersby, 1992, p. 2)

Much Catholic church and school literature suggests that Catholic schools possess distinctive learning environments. The original and continued official view of the Catholic church is that, in some way, 'religious faith permeates the whole of the curriculum' (Leavey, 1993, p. 7). This was implicit in the original foundation of the Australian Catholic schools last century, and has been restated in the four official papers since the Second Vatican Council (Vatican II) of 1962-1965. Church documents spanning 130 years indicate that the Australian Catholic school was to have an atmosphere consistent with Church doctrines (Geoghegan, 1860; Provincial Synod,

1862, 1869), enlivened by the Gospel spirit (Abbott, 1966) and dependent not so much on subject matter or methodology as on the people who work there (Sacred Congregation for Catholic Education, 1977). From the Catholic viewpoint, education is holistic with the religious dimension penetrating the entire school. Conceptually, the notion of having parcels of religion interspersed with parcels of secular knowledge has been rejected strongly.

The assertion that the Catholic school and its classrooms are permeated by a Catholic ethos which manifests itself in distinctive classroom environments has not been subjected to empirical research. In the past 30 years, a limited volume of research has touched upon, but not studied in detail, the classroom environments in Australian Catholic secondary schools (see Dorman, 1994; Fahy, 1980, 1992; Flynn, 1975, 1985, 1993; Leavey, 1972; McTaggart, 1980; Queensland Catholic Education Commission, 1988). Very few of these studies investigated the specific nature of classroom environments in Queensland Catholic secondary schools despite the fact that they are all studies that have involved Catholic schools. Furthermore, very few of these studies have been conceptualised in the learning environment research tradition that has become established firmly in the literature over the past 30 years (see Fraser, 1991, 1994).

Flynn's (1985) research in New South Wales Catholic secondary schools provided strong evidence that aspects of the implicit, unofficial and unstudied curriculum had a much greater influence on student cognitive outcomes (i.e. Higher School Certificate results) than home background variables (as measured by parents' level of education, socioeconomic status and expectations of parents). In particular the level of morale and the extent to which students' personal needs were being met in the school were identified as strong predictors of examination performance. This led Flynn to conclude:

. . . the most effective Catholic schools are characterised, not by their physical resources, buildings or playing fields, but by their outstanding social climates which give them a Catholic ethos or spirit. They are places where people - students, parents and staff - are respected and where relationships with other people and with God are nourished. . . . A good Catholic school is an incredibly

relational environment, most unlike a bank, or an insurance office, or a supermarket on Saturday morning.

(Flynn, 1985, p. 356)

In the United States, Erickson (1981a, 1981b) concluded that the most effective schools of any type are distinguished, not by elaborate facilities, extensively trained teachers, small classes, or high levels of financial support, but by outstanding social climates. People in such schools show consensus, and a sense of special mission that develops school community. These findings are consistent with those of Rutter, Maughan, Mortimore, Ouston and Smith (1979) whose study of inner London schools concluded that school processes collectively produce a unique spirit or ethos. Leavey's (1972) study investigated achievement in religious education and school climate and found that aspects of school climate (e.g. procedures, teachers' attitudes and personal relationships) mediated what students learnt in religious education as much as the formal Christian doctrine curriculum. That is, Leavey showed the importance of psychosocial characteristics in explaining achievement in religious education.

Project Catholic School, a research project conducted in Queensland Catholic schools (Queensland Catholic Education Commission, 1978) resulted in 77 recommendations that were designed to smooth the transformation from religious-dominated old schools to lay-dominated new schools. Of the recommendations of this landmark research, three are germane to this study:

SCHOOLS SHOULD EVALUATE THEIR CLIMATE OR ATMOSPHERE:

5.1 in terms of their internal relationships, with a view to ensuring that the personal relationships among staff, between staff and students, and among students are genuinely open and caring;

5.2 in terms of relationships with parents, which are based on the recognition of and mutual respect for their respective roles in the formal education of the child;

5.3 in terms of their external relationships and of the extent to which they are open to the wider community and their resources are available for use by the local parish and the local district.

(Queensland Catholic Education Commission, 1978, p. 150)

Very positive learning environments are highly desirable in Catholic schools. The philosophical views of the Church and the Queensland Catholic Education Commission (the governing body of Catholic education in Queensland) make this clear.

1.3.3 Importance of Multicultural Learning Environments in Catholic Schools

Cultural diversity is an integral part of modern society. Education plays a critical role in this culturally diverse society. Education influences and reflects the values of society, and the kind of society we want (Gardner, 2001). Contemporary Catholic schools have an ever increasing cultural diversity and it is inconceivable that any student currently in school could live without meeting, working with, or in some other way affecting, or being affected by, people from a wide range of culturally diverse backgrounds (Gillborn & Mirza, 2000).

Garcia (1999), in discussing multicultural education, wrote:

A focus on ethnic studies alone is not sufficient for addressing the educational needs of culturally diverse students because it is too often based on stereotypes. Educators must instead adopt a broader sociocultural approach to language, culture and education. They must understand the child, the family and the community, the school, and the larger society.

(Garcia, 1999, p. 165)

Schools, in educating students must take into consideration the 'Cultural Aspect' if they are going to maximise student learning (Walberg, 1981). Schools face many challenges in a culturally diverse society, however, there are also many advantages to a school which contains students from different cultural backgrounds. Garcia (1999) wrote:

‘Effective instruction of diverse student populations is additive rather than subtractive; that is it recognizes the importance of adding to the rich cultural understandings and skills these students bring with them’

(Garcia, 1999, p. 325).

Neito, in defining multicultural education, wrote that “Multicultural education is a process of comprehensive school reform and basic education for all students.”

(Nieto, 2000, p. 305)

Nieto added that “In the final analysis, multicultural education ... is simply good pedagogy.”

(Nieto, 2000, p. 319)

The Committee on Multicultural Education (1979) identified three major areas which are central to the role of schools in a culturally diverse society. First, relationships, including home/school relationship and student/teacher relationships. Second, curriculum, involving multicultural perspectives across the curriculum and language teaching and learning. Third, essential support, including staffing patterns and staff training. Gardner (2001) concurred and emphasized the key role played by schools in multicultural education.

The contemporary Catholic school seeks to celebrate its Catholic identity by drawing from the deep wells of catholic heritage, its sacramentality, communion of saints, devotions, doctrines, sacred stories and ethical principles, especially the principle of the common good for the community (Treston, 1997). Treston also asserted that “The most obvious, but not always articulated feature of a Catholic school is that its purpose must be aligned to the educational mission of the Church” (p. 13).

Hugonnet (1977) identified six dimensions that characterized the identity of Catholic schools. She asserted that vision, partnership, developing self confidence and self respect amongst students, community building, promotion of social justice, and the development of staff are key to contemporary Catholic schools. It is also important to note the alignment of Hugonnet’s dimensions and the characteristics identified by the Committee on Multicultural Education in 1979.

In terms of the day to day operation of the school there are a number of interrelated elements within the school program which can support the general cultural diversity of society. Schools must provide programs which foster in students an appreciation of the dignity of the contribution that different cultures can make within Australian society. Schools must also provide programs that allow students the opportunity to study the historical, social, sporting, literacy and cultural backgrounds and traditions of particular ethnic groups resident in Australia. Schools must also provide international and intercultural studies that foster amongst students an understanding of the countries of origin of the people who comprise the culturally diverse Australian society. Any programs that schools develop to educate students about cultural diversity must be dynamic and continually enriching. Teachers have a central part in such programs. (Committee on Multicultural Education, 1979). The central issue on education for a culturally diverse society is the development of a positive attitude and respect for cultural diversity among all students in all Australian schools. (Garcia, 2000; Matthews, 1979).

Many researchers have examined particular groups of students in regard to their world views (Anderson, 1988), styles of learning (Oakes, 1990), attitudes (Wiggins, Atwater & Gardner, 1992). Much of this research suggests that students who come from different countries display a distinctive culture. That is, differences in attitudes, styles of learning etc, can be explained more comprehensively if the individual student's cultural origin is considered. Many students who enter Catholic schools come from communities with widely disparate cultural practices and at times the teaching and learning strategies employed in classrooms can be perceived as being in conflict with the natural learning strategies of the learner (Levy, Wubbels & Brekelmans, 1996; Sangster, 2001; Sloneic & Del Vecchio, 1992; Waldrip, 1994). Since teachers can use practices that may inadvertently conflict with the student's previous learning patterns, home environment and values, there is an increasing need for teachers to be sensitive to the important cultural milieu into which their teaching is placed (Clairborne & Ellett, 2005; Dhindsa & Fraser, 2003; Marjoribanks, 2004; Thaman, 1993; Thomas, 2000;).

Okebukola (1986) and Dhindsa and Fraser (2003) have suggested that the cultural background of the learner can have a greater effect on education than does the

substantive nature of the course content. Furthermore, it has been suggested that unless students can relate the application of what is being taught to their own cultural background, then many of the teaching strategies used by teachers are likely to be ineffective in enhancing learning (Sangster, 2001). Culturally diverse students, when entering a new school system, are not only entering a new educational environment but also entering a new cultural environment which may be aligned with different values and goals (Zhou & Bankston, 2000).

Students' perceptions of their classroom environments are influenced by factors such as student cultural background (den Brok et al., 2002,2003; Dhindsa & Fraser, 2003; Levy et al., 2003; Levy & Wubbels, 1996; Waldrup, 1996), teacher cultural background (den Brok et al., 2002, 2003; Levy et al., 1996), acculturation (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003) and family cultural environment (den Brok et al., 2003; Levy, Wubbels, Brekelmans & Morganfield, 1997). Such factors are influenced by the role of the school.

Catholic schools are intensely relational in that they emphasize high quality relationships between all members of the school community (Dorman, 1994). The close links between family and school in Australian Catholic schools allows the establishment of a strong community relationship (Britt, 1975; Flynn, 1993, 1998). The value of establishing links between family and school is crucial in a culturally diverse Australian society. Increasing cultural diversity within Australia has meant that cultural groups have the opportunity to participate in their children's education, despite barriers such as language and cultural differences. The Catholic school must now work within the wider constructs that include family, staff, and the general community (Treston, 1997).

The curriculum offered in multicultural classroom environments in Catholic schools is an inclusive curriculum that deals not just with content and knowledge but also incorporates the mission of the Church, the academic curriculum and the relational aspects (Furtado, 2003). Flynn (1993) asserted that the curriculum in Catholic schools may be divided into two parts, *formal* and *informal*. The dual curriculum concept was also asserted by Lane (1991). He commented that the curriculum for the multicultural classroom environments of Catholic schools is designed to impart curriculum

knowledge to its students, promote the Church's teachings and develop relationships and a sense of community.

In an inclusive Catholic school, staff will be challenged to give strong witness to Christian values and Church teachings. Teachers in multicultural classroom environments in catholic schools will need to commit to ongoing engagement with spiritual and personal formation aligned to the teaching in a Catholic school (Harkness, 2003).

Dorman (1994) contended that contemporary Catholic schools must cater for diverse learning styles, independent thinking and empower students to be responsible and contribute to society. This need to cater for a variety of students with a multitude of physical, social, cultural, and spiritual needs has facilitated much emphasis to be devoted to Catholic schools renewal over recent decades (Spry & Sultmann, 1997). The document Congregation for Catholic Education: *The Catholic School on The Threshold of The Third Millennium* 1998 commented that "On the threshold of the third millennium education faces new challenges which are the result of new socio-political and cultural contexts" (p. 5).

Australian society has diversified dramatically in the last 40 years, with people from many cultures adopting Australia as their home. Schools are becoming increasingly multicultural in their scope and clientele (Falk & Harris, 1983). In this new millennium, although Australians from many different cultural backgrounds co-exist, their demands and expectations of Catholic schools differ markedly. The contemporary Catholic school must adapt to and accommodate such demands. However, the Catholic school, through the service of its people, must become the place where the Spirit is incarnated and a place where Christ lives (Sultmann, 2004).

This section has discussed three principles that underpin the present study. First, the context of the present study to a culturally diverse Australian society. Second, the relevance to Australian Catholic schools. Third, the importance of multicultural learning environments in Catholic schools.

1.4 THE SIGNIFICANCE OF THE STUDY

This study makes an important contribution to Catholic education, learning environment research and multicultural education for several reasons.

First, it is unique in that it examines the learning environments of Queensland Catholic secondary schools. Only limited research has been conducted in the last decade into this area. Dorman (1994) initiated recent investigations into the learning environments of Queensland Catholic secondary schools and the present study continues an investigation into classroom learning environments in Queensland Catholic secondary schools. The examination of Catholic school learning environments is somewhat unique with only limited research previously being conducted (Dorman, 1994).

Second, very limited research has been conducted into multicultural learning environments. Previous research by Fisher and Waldrup (1996), Waldrup and Giddings (1993, 1995), and Waldrup (1996) investigated multicultural learning environments. However, the present study is the first to investigate the multicultural classroom learning environments in Queensland Catholic secondary schools.

Third, the development of an instrument to assess multicultural classroom environments in Queensland Catholic secondary schools is important for future research in these schools. The present study formulates a number of recommendations for further learning environment research in Catholic schools. The Multicultural Classroom Environment Instrument (MCEI) developed for the present study should facilitate further research.

Fourth, the present study responded to the increasing cultural diversity in Australia and how Catholic schools accommodate this diversity. The importance of inclusiveness and relationships in contemporary Catholic schools has influenced how they deal with this issue of cultural diversity. The present study examines students' perceptions of culturally diverse classroom environments in Queensland Catholic secondary schools.

1.5 RESEARCH DESIGN AND STRUCTURE OF THE STUDY

This section briefly examines the research design and structure of the present study. It reports on instrument construction, methodological principles, overall design and the quantitative data collection methods employed in the present study. Full details of the methodology of the present study will be examined in Chapter 3 of this thesis.

1.5.1 Methodological Principles

The research design adopted for the present study had three guiding principles. First, classroom environments are to be understood in terms of the perceptions of the students in that environment. There is no attempt to equate perceptions with the objective reality of what is happening in the classroom. By assuming that behaviour is governed by perceptions rather than what is actually happening, then the students' perceptions become critical. The present study has accepted the importance of students' perceptions as a determinant of behaviour.

Second, the development of a context-specific instrument to assess classroom environments reflects the strong quantitative research tradition that exists in learning environment research. The present study employs the use of an instrument to assess students' perceptions of their multicultural classroom environments. Previous research by Fraser (1984, 1986), and Fraser and Fisher (1983a, 1983b) validates the underlying principle of assessing students' perceptions using a context-specific learning environment instrument.

Third, the employment of the individual mean as the appropriate unit of analysis to investigate multicultural classroom environments. Sirotnik (1980) considered the utilisation of the appropriate unit of analysis as an essential issue when designing and conducting research.

1.5.2 Overall Design of the Study

The overall design of the present study had three stages. Stage 1 was to ascertain from key stakeholders (i.e. students, teachers and parents) key aspects of multicultural classroom environments with the view of developing an appropriate context-specific quantitative instrument for assessing classroom environments in Queensland Catholic secondary schools. Stage 2 was to administer this pilot multicultural classroom environment instrument to a small sample of students in a Catholic secondary school and adjust and refine the pilot instrument for administration in the next stage. Stage 3 involved the administration of the final multicultural classroom environment instrument to 1,460 students across 24 Queensland Catholic secondary schools. The reason for having a three stage process was to allow the researcher the opportunity to develop a suitable instrument, refine it and administer the final version of the multicultural classroom environment instrument and thereby contribute to the validation of this instrument. By having Stage 2 as a pilot stage, issues of instrument administration, length, and suitability could be addressed in preparation for the administration of the final research instrument in Stage 3. Chapter 4 provides full details of the instrument development procedures. The use of the final multicultural classroom environment instrument in Stage 3 provided for the collection of normative data to answer Research Questions 1 to 8 (see Section 1.2.2). Analyses used the individual means as the unit of analysis (see Section 3.2.4).

The general research design methodology employed for the present study was ex post facto. This design was chosen because the nature of the present study does not permit any substantial manipulation of the independent variables (e.g. school type, gender). Ex post facto research is the systematic empirical enquiry in which the researcher does not have direct control of the independent variable because of the fact that their manifestations have already occurred or because they are inherently not manipulatable (Kerlinger, 1977).

Because of the nature of the variables being investigated in this study (i.e. natural or life experiences) it is necessary to employ an ex post facto research design. It is not possible, because of the variables being investigated, to employ a pure experimental

or even quasi-experimental approach. The ex post facto approach permits the investigation of certain variables in a controlled situation. The present study, by investigating variables, such as gender, school type and country of birth, in an ex post facto design, runs the risk of being limited by the recognizable inadequacies of such a research design. However, the research design of the present study will offset some of the potential limitations to validity by ensuring strict research design procedures are followed.

Despite its limitations, ex post facto research design is a popular design in contemporary learning environment research. In the present study, the research design will attempt to nullify the limitations of such a design. It is imperative that the design of the present study recognizes the potential confounding effect of extraneous influences by employing an appropriately executed design and so eliminate potential confounding characteristics. Crucial to this study was to ensure that the selection of the sample was as random as possible, so as to address issues of validity. These issues will be discussed in this Sections 3.4, 3.4.1 and 3.4.2.

1.5.3 Data Collection Methods

Quantitative data was collected in Stages 2 and 3 of the research design process. Stage 2 saw the collection of data that was subsequently used to refine the pilot instrument. Stage 3 allowed the collection of data investigating students' perceptions of their multicultural classroom environments.

The data collected was analysed using a variety of statistical and empirical methods. All analyses that were performed satisfied any statistical assumptions required and used determinants such as school type, year level, gender, subject type and country of birth as independent variables.

Further details on the data collection methods employed and statistical analyses used are provided in Chapters 3, 4 and 5.

1.6 THE RESEARCH SETTING

While a variety of schools were used as part of this research project it should be noted that all were Catholic secondary schools in Queensland. It should therefore be noted that the ethos, makeup and beliefs of Catholic schools have evolved dramatically over the last century. First, no longer are Queensland Catholic schools populated by predominantly Irish Catholics and their descendants. A multitude of students from different cultural backgrounds now constitute a significant proportion of the student population of Catholic schools. This cultural diversity creates many religious and educational expectations and experiences.

Second, the religious makeup of Catholic schools in Queensland has also changed markedly over the last 50 years. No longer do the majority of students come from practicing Catholic families. The number of students who actively practice their faith has decreased markedly and the number of non-Catholic students entering Catholic schools has increased. In some Catholic schools the percentage of non-Catholic students is greater than 30% (Brisbane Catholic Education, 2005).

Third, the level of State and Federal government funding to Queensland Catholic schools is significant, with most Catholic schools receiving at least 60% of their operating budget from the Federal and State governments. The Education Resource Index (ERI) was used to calculate the level of government funding to Catholic schools. In 1997 Brisbane Catholic Education schools were re-listed as Category 11 schools, under this ERI classification. This substantially increased their government funding levels. In 2001 the Socio Economic Score (SES) was employed by the Federal government to evaluate funding levels. This funding mechanism utilized data collected by the Commonwealth Census and calculated an average score for the various collection areas. This mechanism meant that Catholic schools in Queensland were funded according to their SES score. However, in 2002 the Queensland Catholic Education Commission, on behalf of Catholic schools in Queensland, entered into a group funding arrangement with the Commonwealth government and assumed the responsibility of funding distribution to Queensland Catholic schools. Overall, the level of government funding to Catholic schools has increased over the years. This

dependence on government funding must have an influence on the ethos of Catholic schools.

Fourth, Catholic schools have undergone a period of modest growth over the past four decades. Catholic schools in Australia did not experience a period of decline that characterized Catholic schools in the United States in the 1960s and 1970s (James & Levin, 1988). In 2004, approximately 20% of secondary students in Queensland were educated in Catholic schools (Queensland Catholic Education Commission, 2004). In terms of student enrolment, the Government is reliant on the Catholic sector. In fact, the Federal and State governments recognize that it is cost-effective to have Catholic schools. This funding debate is of particular significance at the present time with State and Federal governments examining the issue.

Fifth, the staffing composition of Queensland Catholic schools has changed dramatically in the last three decades with an increasing dependence on the laity. The saturation of Religious personnel in Catholic schools of the 1960s and 1970s has currently made way for the virtual dependence of lay staff in schools. In 1994, 95% of Queensland Catholic secondary school staff was lay staff. This figure increased to over 97% in 2004 (Queensland Catholic Education Commission, 2004).

1.7 THE STRUCTURE OF THIS THESIS

This thesis consists of seven chapters. Chapter 1 is an introductory chapter, outlining the overall concept of this research project. The six remaining chapters expand and detail the process, results and implications of this study.

Chapter 2 provided a contextual basis for the study. It develops the background of Catholic schools, multicultural education and learning environment research in order that subsequent analysis of data, discussion of results and implications of the present study may be examined. Chapter 2 also is important in identifying salient dimensions of multicultural classroom environments which, according to the literature, need to be incorporated into a classroom environment instrument.

Chapter 3 describes the methodology adopted for the present study. There are three important components of this chapter. First, methodological issues and various approaches in learning environment research are reviewed, from which three methodological principles for the present study are detailed. Second, a research design section details procedural issues including data collection methods, variables, samples and unit of analysis. The third section discusses validity issues of the present study.

Chapter 4 provides a detailed discussion into the development of the Multicultural Classroom Environment Instrument (MCEI) that was developed and used in the present study. The chapter details the Instrument Development Criteria and Instrument Development and Validation Procedure used in the present study. Information pertaining to the identification, development and testing of classroom environment scales is provided, as well as details about each scale's structure and validation data. Chapter 4 reports that the final outcome of this process was an eight-scale instrument of 64 items to assess multicultural classroom environments.

Chapter 5 details the process of analysis of the quantitative data and then the provision of the results obtained. Analysis of variance, multiple correlations, multivariate analysis of variance, and a series of non-parametric procedures were used to test for differences between the means classified according to a range of independent variables including school type, year level, subject type, gender and country of birth, with the set of classroom environment scales forming the dependent variables. Graphs detailing the results have been employed to illustrate the findings of the analysis.

Chapter 6 relates the results of the present study to previous learning environment research, Catholic school literature and multicultural education literature. The various reviews of learning environment research over the past 30 years (Fraser, 1986, 1994) allow for a consideration of the present study's findings in the light of previous research. Links between the results of the present study and Catholic school and multicultural education literature are discussed.

Chapter 7 is the final chapter in this thesis and summarises the present study and examines the implications of this study for Catholic secondary schools, learning

environment research and multicultural education. The limitations of the present study are considered briefly.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The present study investigated multicultural classroom environments in Queensland Catholic secondary schools. The primary purpose of this chapter is therefore to examine, from existing literature, the major areas of this thesis – namely Catholic schools, learning environments and cultural diversity. This chapter is intended to provide important background information to the reader on each of the major areas and discuss the relevancy and implications of particular issues in order to give a contextual basis to the present study. As Australia continues to become increasingly multicultural there is a need to examine this diversity and its implications in the context of learning environments in Catholic schools. It also provides a basis for the discussion of research findings in Chapter 6 of this thesis.

The present study examined three broad areas: multicultural education, learning environments and Catholic schools. This chapter will examine each area independently and also link each area together. It is important to note that the areas of multicultural education, learning environments and Catholic schools are major research areas in their own rights. However, the present study examined learning environments in Queensland Catholic secondary schools with a perspective on cultural diversity.

This chapter is structured into three main sections. Section 2.2 provides a comprehensive discussion of Catholic schools. Beginning in Australia in the late 19th century, Catholic schools have undergone many changes which have been linked to the changes in society, the Catholic Church and educational philosophy over the last 100 years. However, Catholic schools have continued to have a uniqueness that identifies their character and purpose. This section will examine some of these characteristics. In Section 2.3, issues relating to the study of learning environments

are introduced. Extensive research in this field has been conducted during the past 40 years. Of particular importance are the learning environments that purportedly exist in Australian Catholic schools. The work of key researchers who have conducted studies into classroom learning environments will be examined in greater detail. Accordingly, the purpose of Section 2.4 is to discuss relevant literature on cultural diversity and multicultural education. Australia has become increasingly multicultural since the end of World War II. Modern Australian is a cosmopolitan society, integrated and coexisting together. From an educational perspective there are differences in expectations and philosophy amongst different cultures (Chen & Stevenson, 1995; Otto, 2000). Section 2.5 summarizes, by integrating the key issues and identifying any relevant gaps in the knowledge base relating to the study of culturally diverse learning environments in Queensland Catholic secondary schools. Within each section a number of subsections examine both historical and contemporary issues, link issues, and indicate relevancy and implications of particular issues to this thesis.

2.2 AUSTRALIAN CATHOLIC SCHOOLS

Catholic Schools have been a part of the educational landscape in Australia since 1870. During this time the format, operation, style and practices of Catholic schools have changed, evolved and adapted to the substantial societal changes in Australia. However, despite this metamorphosis over the last 130 years, Catholic education and Catholic schools have continued to maintain some core elements. The purpose of this section is to introduce and discuss the historical and contemporary nature of Catholic schools in Australia. Because the present study focused on classroom environments in Catholic schools, it is essential that the nature of contemporary Catholic schools be captured by any classroom environment instrument employed in Catholic schools.

Although Catholic schools have changed, they have retained key characteristics that identify them from other educational institutions. Hugonnet (1977) suggests that there are six dimensions that characterise the identity of Catholic secondary schools. They are Vision, Partnership, Faith, Education, Community, Social Justice and Staff.

Section 2.2.1 examines briefly the history of early Catholic schooling in Australia and its emphasis on authority and the Church. The shift in the Catholic Church, its thinking and teachings due to the Second Vatican Council are discussed in Section 2.2.2, while Section 2.2.3 discusses the characteristics of contemporary Catholic schools that are particularly relevant to the present study. In exploring multicultural classroom environments in Catholic schools, it is important to understand the key characteristics of Catholic schools. The characteristics of contemporary Catholic schools will be examined in Section 2.3.4. Finally, the challenges facing Catholic schools will be investigated in Section 2.2.5, with Section 2.2.6 providing some concluding remarks on Catholic schools.

Much has been written about Catholic schools since their beginnings in the 1870s. Catholic education has undergone dramatic changes since these early times, as has the Catholic church. The Catholic church in Australia has traditionally been associated with the outcasts of society: the convicts and the colonial proletariat (Campion, 1982). The early Catholics were predominantly Irish. This caused tension with the English (mainly Protestant) rulers. In order to preserve and develop faith, strict discipline was needed (Crudden, 1972). Until recently, Catholicism in Australia has been a religion of obedience. Consistent with this description of the Church, Australian Catholic schools have been generally regarded as authoritarian structures. Catholic schools have, up until recent times, been staffed predominantly by religious. The hierarchical nature of the early church supported an authoritarian approach and the perpetuation of an air of fear, obedience and punishment.

Vatican II marked a time of change in the Catholic church and therefore in Catholic education. The recognition of the '*human element*' permeated the Catholic church and Catholic schools. The increasing presence of laity and the encouragement of these laity to read the Bible rather than passively accept Church interpretations were central to the changes. The concept of a person making an informed decision became prominent. The emphasis of the human element of Catholic schools and their importance to society were appearing in Catholic education documents such the Sacred Congregation for Catholic Education: *The Catholic School* (1977), Sacred Congregation for Catholic Education: *Lay Catholics in Schools*: Sacred Congregation for Catholic Education: *Witness of Faith* (1982), Congregation for Catholic

Education: *The Religious Dimensions of Education in a Catholic School* (1988), and Congregation for Catholic Education: *The Catholic School on The Threshold of the Third Millennium* (1998). However, the fundamental and underlying purpose of the Catholic school has remained unchanged over time and is described as:

The Catholic school's task 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 subjects taught in the light of the gospel; the second in the growth of the virtues characteristic of the Christian.

(Sacred Congregation for Catholic Education, 1977, p. 3)

The Catholic school participates in the evangelizing mission of the Church and is the privileged environment in which Christian education is carried out (Congregation for Catholic Education, 1998). Mok and Flynn (2002) argue that a Catholic school must be faithful to the Catholic church and its living traditions.

2.2.1 Early Catholic Schooling in Australia

Early Catholic schools in Australia were secularized and under the jurisdiction of the individual state governments. In 1870 the Bishops of the colonies that were to become Australia in 1901, decided that the establishment of Catholic schools was the best way to educate children in the Church and to ensure that Catholic faith, belief and practice would be persevered and handed on to future generations (Keane & Riley, 1977). Catholic schools were subsequently developed and the expectation was that Catholic parents would have their children educated in Catholic Schools (Fogarty, 1959).

In establishing these new Catholic schools, the Bishops of the day were quick to develop a set of foundational principles. These principles were accepted within the Catholic community and became embedded as values in the collective unconsciousness of the Catholic community (Keane & Riley, 1977). They included the right and duty of the Church to give religious instruction through the whole

curriculum and the enlivening of the total atmosphere of the school with Catholic life and prayer. These principles shaped a strong sense of identity for Catholic schools in Australia and they held firm for nearly a century.

The early history of the church was identified with the outcasts of society, the convicts, who were predominantly from Irish decent (Campion, 1982). Ethnic rivalry between the Catholic Irish and the largely Protestant English fuelled conflict in the early history of education, and particularly Catholic education in Australia. As a result of this conflict early Catholic education in Australia was rudimentary at very best. There was tension and conflict because the largely Protestant English population of early Australia assumed the roles of leaders and masters. The Catholic Irish population were the convicts or worked for the English. There was an element of division that resulted in the employment of an authoritarian form of control. As a consequence, early Catholic schools in Australia were not financed or supported by the government but rather by the Australian Catholic church and its predominantly poor constituents. Therefore early Catholic schools were poorly resourced. The buildings were very rudimentary, numbers of staff were very low, staff were poorly trained and often not much older than their students and class sizes were very large. Consequently strict discipline was needed to offset the many deficiencies that existed (Crudden, 1972). The establishment of very clear and authoritarian guidelines was necessary. Figure 2.1 shows the hierarchical and authoritative nature of the early system of Catholic schooling in Australia (Fogarty, 1959). The Church's hierarchy had full authority. The authority of the religious orders and clergy who ran the Catholic schools was absolute. The authoritative nature of the Catholic church had been institutionalized and accepted for many hundreds of years and was supported by the Church's hierarchy of the time.

Catholic parents were expected and obliged to follow the teachings, processes and expectations of the Catholic church. Expectation extended to the issue of Catholic school enrolments. Parents who disobeyed this edict were punished. Murray (cited in Fogarty 1959) reported that parents who disobeyed the Church on the issue of compulsory attendance of Catholics at Catholic schools were denied the Sacraments. Children who did not attend Catholic schools were refused the Sacrament of Confirmation.

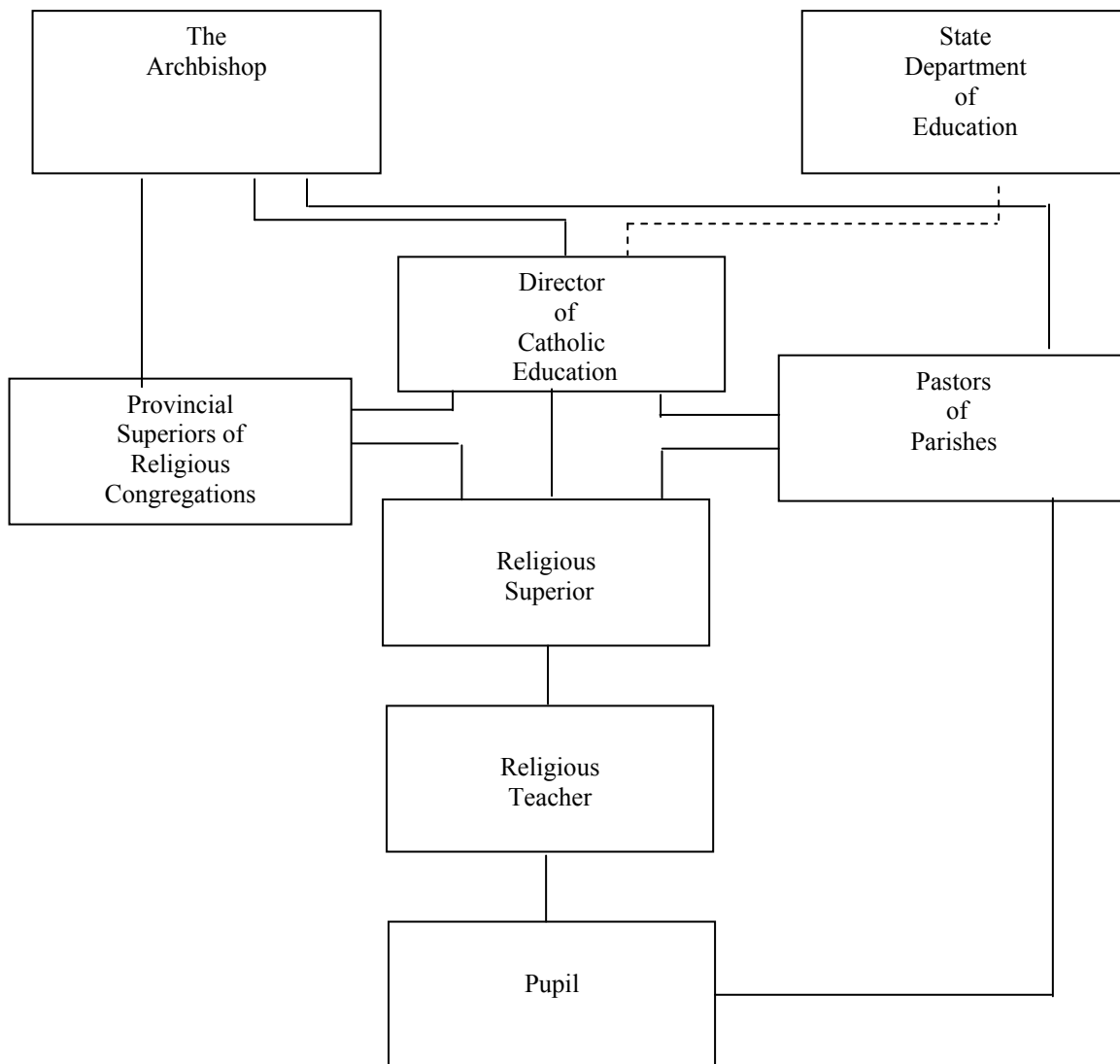


Figure 2.1

Organisation Of Authority In The Catholic School System In 1939

Source: Fogarty (1959, p.441)

The issue of finance was also very important in contributing to the authoritarian nature of the early history of Catholic schools, particularly with the collapse of the Government sponsored *Denominational System* in the late 1800s. The Bishops of the day established a Catholic school system parallel to the government system (Dorman, 1994). McManus (1990) described Christian Brothers schooling of the late 19th Century as being strong on discipline with a fair sprinkling of fear as the norm. The invitation to various religious orders in the late 1800s to administer and staff schools was critical to the system's survival and subsequent expansion in the 1900s.

Early Church documents indicated that the Catholic school had an atmosphere, which was consistent with Christian Doctrines (Geoghegan, 1860; Provincial Synod, 1862, 1869): adherence and obedience of the Catholic community to the Bible and various Church decrees. Terms like Christian Doctrine masked the harsh reality of a schooling system which was dominated by absolutes in authority, obedience, conformity and a Heaven-Hell view of life after death.

Central to the ethos of early Catholic schools was the edict that strict discipline was necessary for a good Catholic education. Parents expected the Catholic schools to discipline their children. Corporal punishment and unequivocal adherence to authority were integral components of successful Catholic education. The importance of religious teaching and discipline to the Catholic school environment was stressed by the Pastoral Synod of 1869:

The evil of mixed schools, or of what comes nearly to the same thing, schools in which religious teaching and discipline are withdrawn from the guidance of the Church, is so obvious and so gross an invasion of common liberty of conscience.

(Pastoral Synod, cited in O'Donoghue, 1983, p. 87)

In the early part of the 20th century, the Church hierarchy saw Catholic schools as indoctrinators. They were seen as the means by which the long term survival of the Church in Australia could occur. This view was supported by the bishops of the time, some of whom saw the establishment of each Catholic school as a distinct act of supernatural faith (Fogarty, 1959). Ironically, in later years, the authoritarian nature of

the schools drove many Catholics away from the Catholic church and Catholic schools.

The development of the concept of parochial schools, which were established by local parishioners and with the support of the Church hierarchy, was the next stage in the development of Catholic education in Australia (Beovich, 1949). Without the atmosphere provided by the parochial schools, Catholics could not hope to retain their faith in Australia's mixed community (Gilchrist, 1982). However, despite the importance of the parochial schools, times were difficult. Catholic schools were poorly resourced, physically very rudimentary, understaffed and with very large student numbers. Tobin (1987) wrote of early Catholic schools:

Catholic education expanded to most cities and many townships throughout the state. Its expansion was due largely to the efforts of religious congregations, whose members, at the direction of their supervisors, taught for many years in parish churches that also sufficed as the school, in corrugated iron or rough shed, in rooms in the convent, but least often in buildings that were erected for the sole purpose of being a school.

(Tobin, 1987, p. XI)

The above discussion suggests four issues pertaining to the early Catholic schools. First, the absolute authority of the Church to make decisions. Second, a Catholic ethos was to permeate the Catholic school environment. Third, authority, obedience, fear and punishment were central to a Catholic school. Finally, there were insufficient teachers, poor finances and rudimentary physical resources.

2.2.2 Post Vatican II Catholic Schooling In Australia

The status of Catholic education in Australia remained fairly much unchanged during the early part of the 20th century. The period from 1950 through to 1965 was seen as a consolidation and growth period. This was distinctive to the Defence of Faith Phase leading up to 1950 (Havinghurst, 1970). This relatively unchanged period in Australian Catholic education coincided with the relatively unchanged period in the

Catholic church. The air of obedience, authority and Church decrees was the norm up until about 1965.

The changes that occurred firstly to the Catholic Church and then to Catholic education during the 1960s were, to a significant degree, due to the Second Vatican Council. There was a general shift in policy due to the Second Vatican Council's paper, *Declaration on Christian Education (Gravissimum Educationis)* of October 1965. This major shift in focus concerned the human element of our lives. Prior to the Second Vatican Council, the Catholic Church did not consider the human element, rather, the emphasis was on the supernatural and spiritual aspects (Dorman, 1994). Vatican II declared that "The Church is bound to give these children of hers the kind of education through which their entire lives can be penetrated with the spirit of Christ" (Abbott, 1966, p. 642).

Therefore it provided a basic rationale for the human elements of the education process, namely that relationships and personal growth became a significant part of Catholic schools. In order for this to occur, the authoritarian nature of the Catholic church and schools had to change. The second Vatican Council launched Catholic education into a phase of Assimilation and Pluralism (Havinghurst, 1970). In this changing modern society, Catholic education had to adjust, adapt and survive.

2.2.3 Contemporary Catholic Schooling in Australia

Contemporary Catholic schools are diverse in nature and operation. In the years leading up to the 1990s economic rationalism was paramount to organizations. Knight (1992) highlighted the effects of government pressures on Catholic education. Catholic schools have had to restructure in order to achieve greater efficiency, improved outcomes and greater accountability. No longer were the concepts of obedience or authority as relevant as they were in early Catholic education. Despite this diversity there are common, underlying features of all Catholic schools. Treston (1997) commented that "The most obvious, but not always articulated feature of a Catholic school is that its purpose must be aligned to the educational mission of the Church" (p. 13).

The contemporary Catholic school seeks to celebrate its Catholic identity by drawing from the deep wells of Catholic heritage: its sacramentality, communion of saints, devotions, doctrines, sacred stories and ethical principles, especially the principle of the common good for the community (Treston, 1997).

Catholic church documents on education such as the Sacred Congregation for Catholic Education: *The Catholic School* (1977), the Sacred Congregation for Catholic Education: *Lay Catholics in Schools: Witness to Faith* (1982), the Congregation for Catholic Education: *The Religious Dimension of Education in a Catholic School* (1988), and the Congregation for Catholic Education: *The Catholic School on The Threshold of The Third Millennium* (1998) have expanded on the original Vatican II paper. The distinctive nature of Catholic education was conveyed clearly by the Sacred Congregation for Catholic Education (1977):

She establishes her own schools because she considers them as privileged means of promoting the formation of the whole man.... In the light of her mission of salvation, the Church considers that the Catholic school provides a privileged environment for the complete formation of her members, and that it also provides a highly important service to mankind.

(Sacred Congregation for Catholic Education, 1977, pp.13 & 19)

In Section 2.2, reference was made to six dimensions that Hugonnet (1977) believed characterized the identity of Catholic schools. The first characteristic was Vision. Central to the operation of any Catholic school is the promise that its primary operation is to facilitate the work of the Catholic church. Catholic schools have been chosen by the Catholic church to socialize young people into the Church (Hugonnet, 1977). The second aspect identified by Hugonnet was that of Partnership. Church, clergy and parents all work in partnership with Catholic schools to achieve the aims and goals of the Church. Over time the combinations and rules played within this partnership have changed; however, partnership has always been crucial to the successful operation of a Catholic school. The third aspect was that Catholic schools develop self confidence and self respect amongst its students. Hugonnet believed that the distinguishing factor of Catholic schools is the value base, which challenges the

curriculum and forms the central purpose of learning, namely Faith. The document, the Sacred Congregation for Catholic Education: *The Catholic School* commented:

The specific mission of the school then, is a critical systematic transmission of culture in the light of faith, and the bringing forth of the power of Christian virtue by the integration of culture with faith and of faith with the living.

(Sacred Congregation for Catholic Education, 1977, p. 25)

Hugonnet's fourth dimension was that Catholic schools are responsible for building community. This community may be developed through rituals of prayer, liturgy and sacraments. It may also be nurtured through the importance placed on family and rituals. These rituals, values and symbols of the Catholic school community need to respect, reflect and include the Christian message, the Catholic tradition and the diversity, which is now integral to modern society (Hugonnet, 1977). The fifth aspect was that Catholic schools must continue to promote the social justice mission of the Catholic Church. Through various processes such as prayer and community service work that operate within the school, the Church's mission of social justice must be promoted. Finally, Hugonnet suggested that the development of staff is crucial within a Catholic school. Teachers have a role that extends far beyond the simple task of imparting knowledge. They must also promote the Church's teachings, be listeners and supportive role models. Flynn (1985) noted that many teachers in Catholic schools see their role as a ministry rather than simply a job. Further studies by Flynn (1993) revealed that staff valued the friendly environment of the Catholic school and the mutual respect which exists between staff and students.

Many staff in Catholic schools view this relational aspect as very important. This view however, is not at the expense of academic performance. The view of teaching as a ministry combines the professional aspect of teaching the academic curriculum with the relational and community aspect of interacting and supporting the students. Catholic schools possess the obvious educational features of programs, activities and personnel. However, the schools are also Catholic in other, subtler ways. Issues such as perceptions of students, parents and staff and the way they interact is one such way. Others include the relationship of staff with their students. Many staff view their work not merely as a job but rather as a vocation, in that they know and care about their

students and see their role as educator, carer and supporter (Flynn, 1985, 1993, 1998). The key role played by staff in Catholic schools will be examined further in Section 2.4.2.

The community that is fostered in a Catholic school is consistent with the *gemeinschaft* model of social order (Erickson, MacDonald & Manley-Casimer, 1979; McDermott, 1985). This model values special commitment, remote consensus, and an awareness of specialness as important. They also form key roles in Catholic schools. Shared values, shared activities and caring social relationships are important to Catholic school communities (Bryk & Driscoll, 1988; Lesko, 1988; Owens & Steinhoff, 1989; Ramsay & Clark, 1990).

Catholic schools are intensely relational in that they emphasize high quality relationships between all members of the school community (Dorman, 1994). The Queensland Catholic Education Commission (1978) recommended that a school's climate be evaluated in terms of its 'internal relationships.' Relationships exist not only between staff and students, but also between staff and staff, student and student and staff and parent. The relationships should be open and caring. This importance placed on relationships with a Catholic school is consistent with the Vatican documents. Contemporary Catholic schools advocate participatory decision making and the use of relational power. This is very different to the early authoritative Catholic schools of the 1800s and early 1900s. The close links between family and school in Australian Catholic schools allows the establishment of a strong community relationship (Britt, 1975; Flynn, 1993, 1998). The value of establishing links between family and school is crucial in the culturally diverse modern Australian society. The increasing cultural diversity within Australia has meant that cultural groups have the opportunity to participate in their children's education, despite barriers such as language and cultural differences. This issue of home-school relationships and family will be examined further in Sections 2.4.4, 2.4.4.2, and 2.4.4.3.

Coleman and Hoffer (1987) use a term 'Social Capital' to refer to the relationship of community, school and family. Social Capital refers to more than just the immediate school environment. With the pluralistic nature of modern society, the breakdown of traditional family values, the changing and often diminishing roles of parishes within

Catholic education, the expansiveness of the concept ‘capital’ is important. No longer can a Catholic school operate in isolation. It must now work within wider constructs that include family, staff, and the general community (Treston, 1997).

The curriculum offered in a Catholic school is an inclusive curriculum that deals not just with content and knowledge but also incorporates the mission of the Church, the academic curriculum and the relational aspects outlined previously (Furtado, 2003). The curriculum may be divided into two parts. The first is the *Formal* curriculum, which Flynn (1993) described as:

The formal curriculum comprises the knowledge, skills, attitudes and values related to both general education and religious education which are formally taught by teachers and which contribute to the all round development of the students.

(Flynn, 1993, p. 189)

The second aspect of the curriculum may be described as the *Informal* curriculum, which incorporates the unofficial, implicit or unstudied learning that takes place in the daily life of the students and teachers at school which Flynn (1993) described as:

The informal curriculum of the school is what it teaches because of the kind of place it is. And the school is the kind of place through the ancillary consequences of various approaches to teaching, by the kind of reward system that it uses, by the organizational structure it employs to sustain its existence, by the physical characteristics of the school plant, and by the furniture it uses and the surroundings it creates.

These characteristics constitute some of the dominant components of the school’s informal curriculum. Although these features are seldom publicly announced, they are intuitively recognized by parents, students and teachers. Because they are salient and pervasive features of schooling, what they teach may be among the most important lessons a child learns.

(Flynn, 1993, p. 190)

The concept of a dual curriculum was also referred to by Lane (1991). He commented that Catholic schools operate within a national schools' curriculum framework. However, he also noted the Catholic school's commitment to facilitate learning that will assist students to realize their potential and be positive citizens. Catholic schools are designed to be educational institutions, imparting curriculum knowledge to its students, promoting the Church's teachings and developing relationships and a sense of community. The Vatican II document, Sacred Congregation for Catholic Education: *The Catholic School* (1977), conveyed the distinctive nature of Catholic Education and stated that "She establishes her own schools because she considers them as privileged means of promoting the formation of the whole man" (p. 13). Mok and Flynn (2002) asserted that Catholic schools have no reason to exist apart from the Church and cannot be called Catholic if they are not faithful to the Catholic Church and its living traditions.

2.2.4 Characteristics of Contemporary Catholic Schools

Sections 2.2.1, 2.2.2, and 2.2.3 have outlined the origins and changes that have taken place in Catholic schools in Australia. This section will outline the key characteristics of contemporary Catholic schools. Four key issues have been identified as characterizing contemporary Catholic schools. They are Gospel Values, Faith Formation, Staff and Students and will be examined in Sections 2.2.4.1, 2.2.4.2, 2.2.4.3 and 2.2.4.4 respectively.

2.2.4.1 *Gospel Values*

Contemporary Catholic schools are very relational in their operation and adaptive to a changing society and to a changing and evolving church (Dorman, 1994). Since their origin in the 19th century, a prominent feature of Catholic schools has been the centrality of Gospel Values. The fundamental focus of Catholic schools has been described as:

Catholic education is an expression of the mission entrusted by Jesus to the Church He founded. Through education the Church seeks to prepare its members to proclaim the Good News and to translate this proclamation into

action. Since the Christian vocation is a call to transform oneself and society with God's help, the educational efforts of the Church must encompass the twin purpose of personal sanctification and social reform in light of Christian values.

(To Teach As Jesus Did, 1973, p. 3)

In investigating the operations of Catholic schools, Coriel (1984) believed that Catholic schools are pushing beyond concerns of academic curriculum and school leadership to focus on shaping education in which Gospel values are integrated into all aspects of school life. O'Brien (1987) reinforced this point with his study of the Bishops of the United States where almost unanimously Gospel values were seen as central to the operation in a Catholic school.

A Catholic school will celebrate its Catholic identity by drawing from the deep wells of Catholic heritage, its sacramentality, doctrines and ethical principles, all of which are entrenched in the values of the Gospels (Sacred Congregation for Catholic Education: *The Religious Dimensions of Education in a Catholic School*, 1988). While being sensitive to the pluralism of the faith diversity of staff, students and parents, the Catholic school should treasure its Catholic charisma and operate by the Gospel values (Treston, 1997). O'Gorman (1987) claims that a Catholic school cannot be a school first and Catholic second or vice-versa. The two concepts are inseparable. Over the past 30 years research into the classroom environments of Australian Catholic schools has taken place. (Brien & Hack, 2005; Dorman, 2000; Dorman, 2002; Dorman, 2003; Dorman & d'Arbon, 2003; Dorman & Ferguson, 2004; Elliot, 2004; Fahey, 1980; Flynn, 1975, 1985, 1993, 1998; Hodson, 2004 ; Leavey, 1972, 1993; Lorenz, 2005). The work of Dorman (1994) identified the centrality of Gospel values in Catholic school classroom environments.

Catholic schools are Christian Communities (Brennan, 1990; Brisbane Catholic Education, 1975). As a Christian community, a Catholic school demonstrates actions that are consistent with teachings of the Gospels. Mackey (1990) asserted that the fundamentals of the Gospel underpin the values and operations of Catholic schools and their curriculum. The Catholic schools have a commitment to a Christian view of

the world. The Congregation for Catholic Education (1988) stated very clearly the centrality of the Gospel:

The inspiration of Jesus must be translated from the ideal into the real. The Gospel spirit should be evident in a Christian way of thought and life which permeates all facets of the educational climate.

(The Congregation for Catholic Education, 1988, p. 24)

Furthermore Dorman (1994) stated that “Gospel values are the unifying theme of the Catholic School. A school ceases to be a Christian community if its actions are not consistent with the values of the Gospels” (p. 52).

Catholic schools are places that are focused on Gospel values and that are relational in their nature. These core values must permeate all aspects of the Catholic school. One very important area that distinguishes Catholic schools from other educational institutions is in the decision making processes. Decision making in a Catholic school must be Gospel centred and power must be used in a relational manner (Davison, 1999; Dorman, 1994; Holmes, 2003; Mellor, 1998; Turner, 2005). Decision making in a Catholic school cannot be divorced from the centrality of Gospel values and the relational nature of the Catholic school community. A collaborative approach involving teachers in formal decision making processes and participatory decision making, using relational power, is of considerable importance to the Catholic school. This is translated to the classroom level. Flynn (1985) indicated that teachers in Catholic schools know their students, develop a relational contact with their students and are interested in supporting their students. There is a strong positive relationship between students and teachers (Flynn 1993).

2.2.4.2 Faith Formation

Catholic schools, whilst being Gospel centred, are relational in nature and nurturing an education in which the Mission of the Church permeates all aspects of the school. They also display a vital role in the provision of an environment that allows all members of the community to educate and advance their faith development. Catholic

schools provide an environment for the complete formation of the school community (Flynn, 1993, 1998). The function of Catholic schools is to provide the synthesis of culture and faith. This synthesis is achieved through integrating all the different aspects of human knowledge through the subjects taught and in the light of the gospels. The purpose of Catholic schools can be lost without the constant reference to the gospel and the frequent encounter with Christ (Flynn, 1993, 1998).

Catholic schools must strive to create an environment that nurtures the faith development of all. Archbishop Bathersby, in 1992, asserted:

It would be a complete misunderstanding to see the Catholic school just as any other, with a daily religion lesson added. Important as the religion program is, it is only part of the difference. The whole atmosphere of the school is one of shared faith where parents, teachers and students come together in prayer and action to live the Gospel of Jesus. For the young, the witnesses of faith-filled adults, teachers and parents, provide a lesson and encouragement that no textbook can replace.

(Bathersby, 1992, p. 2)

The Catholic school is an important complement of the Catholic home in its efforts to develop the faith of the children (Flynn, 1993, 1998). The Catholic school appears to act as a multiplier of the religious faith of the home (Flynn, 1985). The influence of family and community are seen as important components for the present study. In particular, in the culturally diverse modern Australian society, the influence of family on student perceptions and outcomes is paramount. Figure 2.2 shows the various interconnecting influences on the Catholic school and its role in the communication of Faith. It highlights the relationship which exists between the Catholic school and the various communities which it serves, namely the home, the Church, the local community and society at large. Figure 2.3 shows a number of important relationships that exist for the Catholic school. These relationships include the school environment, the 'pre-catechesis' program of the school, the parental religiousness and the effect of the socio-economic status of the family.

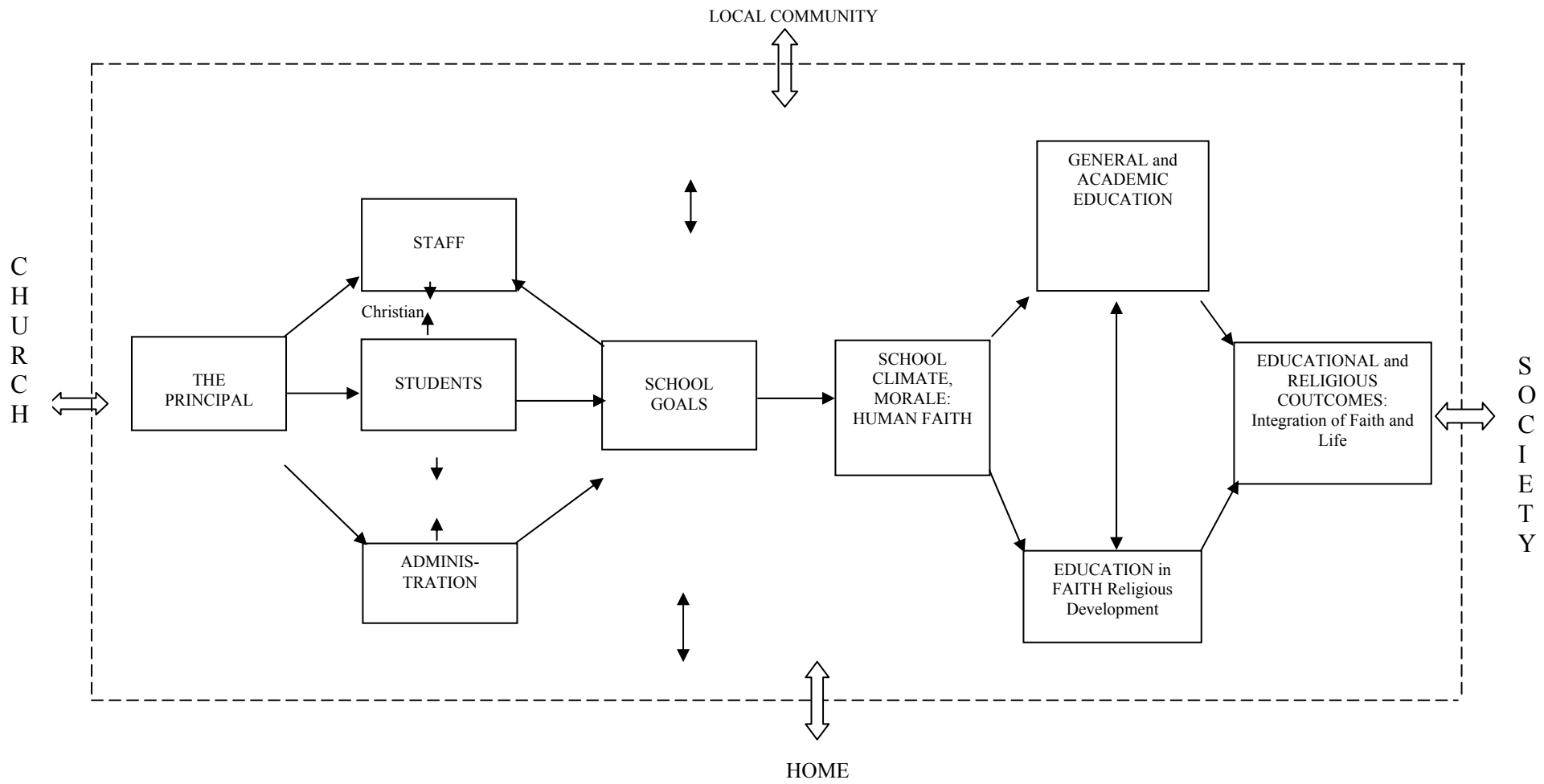


Figure 2.2

The Catholic School and the Communication of Faith

Source: Flynn (1979, p.185)

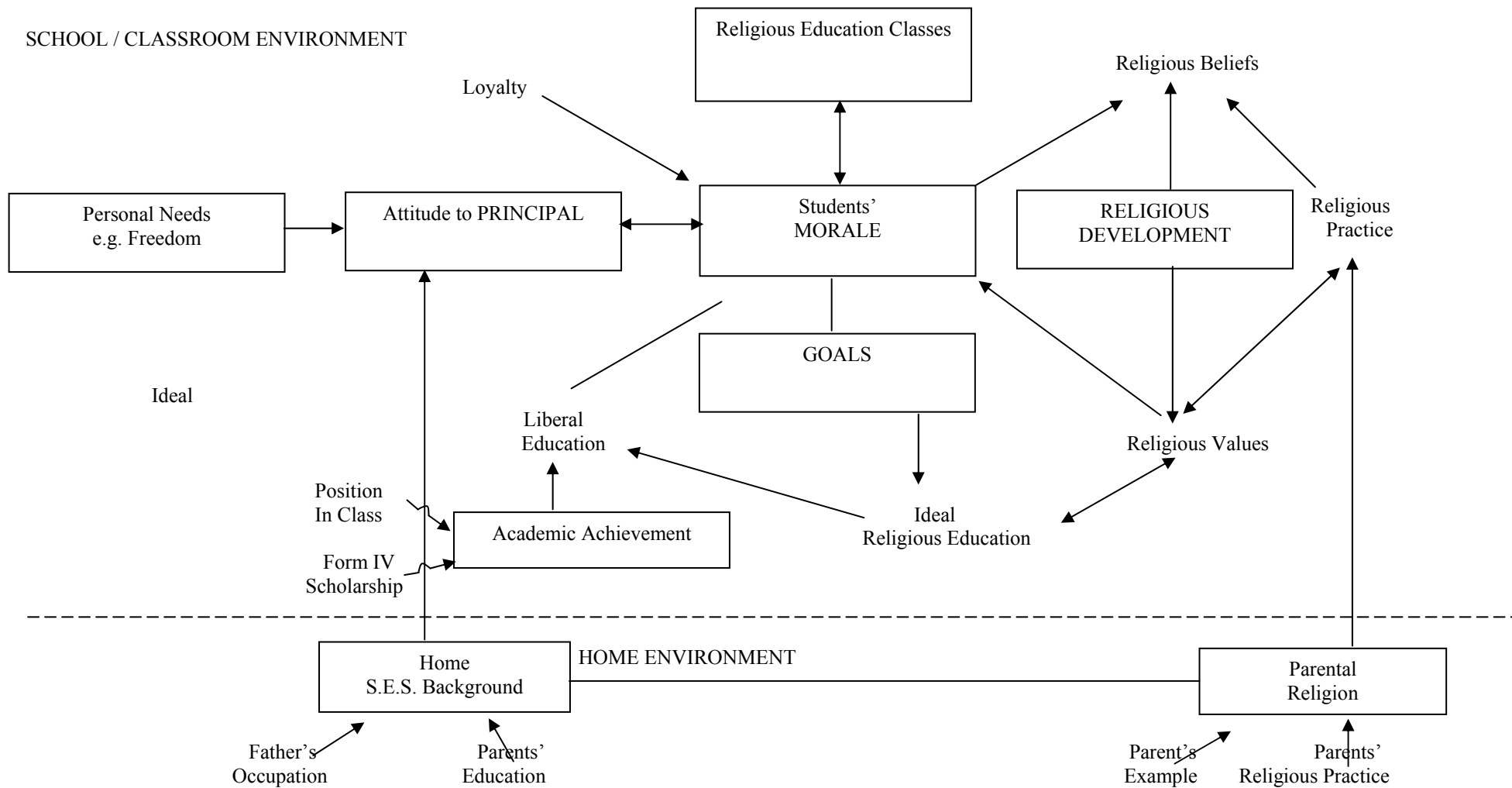


Figure 2.3

The Catholic School in Action: Interactions between the Home and School Environments

Source: Flynn (1979, p. 182)

In a secular age, when faith tends to be less important than in previous decades, the Catholic school must be involved in the integration of faith and life. The Catholic school must endeavour to prepare its students to answer the challenge of Jesus. The document Sacred Congregation for Catholic Education: *The Catholic School* (1977) stated:

The Catholic School's task 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.

(The Catholic School, 1977, p. 33)

The importance and influence that Catholic schools have on the faith development of its students has been well documented in the literature (Flynn, 1979, 1985, 1993, 1998; Leavey, 1993). Flynn (1979) asserted:

The environment of a Catholic school would appear to be its greatest formative influence and, in a real sense, is the Christian message as experienced by students. The social structure and climate of the school enshrine its Christian message and values, and this can either be a means or a barrier to the development of religious faith. Catholic schools will be effective in education in faith to the extent that they project a witness to students which is congruent with the message they seek to communicate, that is to say, a witness of Christian community which is a sign of the Kingdom of God.

(Flynn, 1979, p. 284)

Section 2.4.4 will further examine the influence of the home environment and students' perceptions.

2.2.4.3 *Staff*

An integral part of any school is its staff. This is especially true for Catholic schools. With Catholic schools permeated by Gospel values and with a major emphasis on their relational nature, the role played by staff is pivotal. Great importance is placed on the relational aspects of Catholic schools. Leavey (1993) asserted:

The quality of staff and their understanding of, and continued commitment to, the religious goals of the school and to the theory of Catholic education is the major safeguard to the school's religious identity.

(Leavey, 1993, p. 9)

The document Sacred Congregation for Catholic Education: *Lay Catholics in Schools: Witness to Faith* (1982), highlighted the pivotal role played by staff, in particular lay staff in contemporary Catholic schools, and stated that lay staff substantially determine whether or not the school realises its aims. Teachers in Catholic schools assume a dual role. They are educators of their students, imparting subject knowledge to their students and they assume the role of minister, working with their students and assisting them as they journey through their school years. The duality of the teacher's role is not mutually exclusive but rather is very much integrated (Dorman, 1994). It is not possible for the teacher to be on one hand the educator and then on another occasion the minister. Both roles are intertwined. Staff in Catholic schools often view their role within the school not simply as work but rather as a ministry (Flynn 1985). Ideally there should be a sense of vocation or mission among Catholic school staff rather than simply a means to gain financial reward.

With this duality of roles comes increased responsibility. Catholic school staff need to be informed and empowered in order to enact their ministry. Through their empowerment and modelling of Christian behaviours, Catholic school staff exert an influence on school and classroom environments. The Sacred Congregation for Catholic Education (1977) noted:

The achievement of the aims of the Catholic school depends not so much on subject matter or methodology as on the people who work there. The extent to which the Christian message is transmitted through education depends to a very great extent on the teachers.

(Sacred Congregation for Catholic Education, 1977, p. 36)

The pivotal role of staff in Catholic schools is enhanced by their empowerment. The Principal of the Catholic school plays a key role in determining the overall effectiveness of the school environment in the transmission of the Christian message (Flynn, 1979, 1993, 1998). The conviction that the school's effectiveness is determined by the leadership and vision of the Principal is not only in accord with common experience, but is also confirmed by research (Gross & Herriot, 1965).

Researchers such as Alcorn (1970), Benson, Williams and Yeager (1984), Bryk, Holland, Lee and Carriedo (1984), McDermott (1985), and Raffery (1985) have examined the characteristics of teachers in American Catholic schools and categorized the characteristics into three areas: *faith qualities, relational qualities, and professional qualities*. Collectively they attest to the multidimensional nature of the role of a teacher in a Catholic school. Clearly, the teacher is pivotal to the effectiveness of Catholic schools (Dorman, 1994). Although there is a lack of similar empirical evidence from the Australian setting, similar behaviours and qualities are regarded as characteristics of teachers in Australian Catholic schools (Degenhardt, 1990; Dwyer, 1986; Flynn, 1985; Furtado, 2003; Mok & Flynn, 2002; Queensland Catholic Education Commission, 1978; Sultmann, 2004; Waugh & Collins, 1997).

In an inclusive Catholic school, staff will be challenged to give strong witness to Christian values and Church teachings. Teachers in Catholic schools will need to commit to ongoing engagement with spiritual and personal formation aligned to teaching in a Catholic school (Harkness, 2003). The document Congregation for catholic Education: *The Catholic School on The Threshold of The Third Millennium* (1998) emphasized the importance of the teacher in creating a unique Christian school climate and asserts that the teacher in a Catholic school sees their role as being more than a profession but rather as a vocation to form students, a widespread and indispensable lay service in the Church.

In examining the key and multi-dimensional role played by staff in Catholic schools it must be noted that there has been a radical change in staffing compositions since their inception some 130 years ago. From the 1870s through till the 1960s Catholic schools were staffed and administered predominantly by religious. Priests, Brothers and Nuns formed the bulk of any Catholic school staff and so created the ongoing revelation of the religious order's charism. The charism of the particular religious orders was a public and often tangible indication of the origin of the particular religious order, its founder and the philosophies that underpinned it, and the men and women that were part of the order.

However, since the 1960s much has changed, with Catholic school staffing profiles becoming increasingly lay in nature. There has been a collapse in the numbers of religious staffing Catholic schools (McManus, 1990). In St Francis Xavier Province (Queensland) of the Christian Brothers there has been a shift in staffing proportions. In 1965, religious staff formed 55% of the total staff, whereas in 1990, this figure had declined to 9%. It has further decreased to less than 5% in 2005 (Edmund Rice Education Directorate, 2005). The decline noted in Christian Brothers' numbers is also mirrored in other religious orders. Another point to note regarding the changing staff compositions of Catholic schools is that it is not uncommon for Catholic schools today to be completely administered and staffed by laity. Also, many of the religious who are still in schools have assumed non-teaching roles such as campus minister and counsellor roles.

The decline in the number of religious in schools has major implications to the ongoing charisms of the religious orders and their schools. The maintenance of such a charism is now dependent on the lay staff. To assist with this, some religious orders are conducting courses for staff in the charism of the religious order. The Christian Brothers and the Marist Brothers are two such religious orders who have done a great deal of work in educating and empowering staff about the charisms of their respective founders. The Christian Brothers have conducted programs for the staff in their schools on the charism of their founder, Edmund Rice. In 2004 Edmund Rice Education Australia created the document titled '*The Charter – A Proclamation Of An Authentic Expression of Edmund Rice Education As Applied To Catholic Schools In The Edmund Rice Tradition*' which was designed to allow the communities of

Catholic schools in the Edmund Rice tradition to better understand the 12 Cultural Characteristics that form the basis of their schools. It was also part of the succession program which will allow Edmund Rice schools to continue to maintain the charism of Edmund Rice and the Christian Brothers without the physical presence of the Christian Brothers in the schools. Similarly, the Marist Brothers have conducted a program known as 'Sharing Our Call', for the staff in their schools. The ability and willingness of the lay staff to take up this challenge has major implications on the future effectiveness of Catholic schools. The challenge to lay people in Catholic schools is to respond to a baptismal call to live in accord with the Spirit of Christ (Sultmann, 2004).

Staff in Catholic schools have assumed a duality of roles. They are educators and ministers. They possess faith, relational and professional qualities that enable them to carry out their myriad of roles. It must also be noted that within Catholic schools the composition of staff over the last 40 years has become increasingly lay in nature, yet the multidimensional role has become increasingly necessary due to societal and educational pressures. They assume a prime responsibility in creating a unique Christian school climate (Congregation for Catholic Education: *The Catholic School on The Threshold of The Third Millennium*, 1998).

2.2.4.4 *Students*

Over the last 40 years there have been significant societal changes which have affected the students of Catholic schools. The modern profile of a student attending a Catholic school is markedly different to that of their counterparts 40 years ago. Because this study is investigating multicultural classroom environments in Queensland Catholic secondary schools it is necessary to examine the changing nature of students in Catholic schools.

It was estimated that Australian Catholic schools had in excess of 20% non-Catholic enrolment in 1976 (Thomson, 1976). Since that time this figure has increased with some Catholic schools recording over 30% of their students as non-Catholic (Brisbane Catholic Education, 2004). Many students in Catholic schools are from families which

are not affiliated with the Eucharist or the Church, do not attend Mass on a regular basis or are not Catholic. As a consequence, the evangelizing role of the Catholic school has become even more important than in former times (Fahy, 1992; Flynn, 1993, 1998; Mok & Flynn, 2002). For many families, the Catholic school is the only face of Christ they experience and the only Church they encounter. If Catholic schools are to continue to be permeated in Gospel values and play a pivotal role in the faith formation of their students (See Section 2.2.3) they must firstly be aware of the changing nature of their students and adjust accordingly.

There has been a need for Catholic schools to cater for the ever increasing diversity of students and their needs. The Profile of The Catholic School of The Future (Queensland Catholic Education Commission, 1978) emphasised the importance of meeting the needs of individual students. The importance to treat students as individuals and cater for their specific needs is emphasized:

The Catholic school is attentive to the specific needs of each student.... Each student has a distinct origin and is a unique individual. A Catholic school is not simply a place where lessons are taught; it is a centre that has an operative educational philosophy, attentive to the needs of today's youth.

(Congregation for Catholic Education, 1998, p. 21)

Dorman (1994) contends that contemporary Catholic schools must cater for diverse learning styles, independent thinking and empower students to be responsible and contribute to society. This need to cater for a variety of students with a multitude of physical, social, educational, cultural and spiritual needs has facilitated an emphasis devoted to Catholic school renewal over recent decades. Spry and Sultmann (1997) cited the need to cope with rapid and radical change as one of the primary motivations for the reform agenda in Catholic schools.

The contemporary Catholic school must also complement the student's home environment. A more detailed examination of the influence of the family will be detailed in Section 2.4.4. Flynn (1975, 1985, 1993, 1998), and Mok and Flynn (2002) asserted that students from 'good religious homes' who attend schools with a

‘supportive religious climate’, had a much higher response to Mass attendance than students who came from a ‘weak religious home’ or who attend a ‘weak religious school.’ The school seemed to be acting as a ‘multiplier’ of the faith of the home (Flynn, 1993).

The students attending contemporary Catholic schools are different to their counterparts of 40 years ago. Today, they are more diverse, their needs are more varied and demanding, for many their exposure to Church is more limited, and the influence of family and culture have assumed more importance in their schooling. The phenomena of multiculturalism and the increasingly multi-ethnic and multi-religious society is at the same time an enrichment and a source of further problems (Congregation for Catholic Education: *The Catholic School on The Threshold of The Third Millennium*, 1998). In 2001, 88,900 people from more than 150 different countries settled in Australia under the various immigration approved categories. It must also be noted that of those people who settled in Australia in 2001, approximately 30% were school aged children (Department of Immigration and Multicultural and Indigenous Affairs, 2003). This diverse influx of students has contributed to the increasing cultural diversity being experienced in Australian schools currently. The present study aims to ascertain the key characteristics of the multicultural classroom environments of contemporary Queensland Catholic secondary schools.

2.2.5 Challenges Facing Contemporary Catholic Schools

The evolution of Catholic schools has brought with it challenges. Some modern researchers of Catholic schools would argue that Catholic schools are in crisis. Furtado (1991) suggested that the Catholic church must be concerned with the fact that Catholic schools are no longer providing the bulk of education to Australian Catholics.

There are many challenges facing modern Catholic schools. Perhaps greatest is the fact that in the new millennium, Catholic schools will be catering to a clientele who, in large numbers, feel disorientated from the regularly worshipping community (D’Orsa, 2003). The future Catholic school must be clearer about its vision, otherwise

it will simply try to do better at what other schools already do. It is more important to do different things rather than simply doing things better (Faulkner, 1991). Dodds (1998) suggested the challenge for Catholic schools was:

Within the current context of Catholic schools, while never denying the spirituality, traditions and the deep story of the institute, people need to re-imagine and re-image the gifts of the spirit within this extraordinary mission of the Church in education. That is an enormous challenge for catholic schools approaching the Third Millennium.

(Dodds, 1998, p. 22)

The document Congregation for Catholic Education: *The Catholic School on The Threshold of The Third Millennium* (1998) commented that “On the threshold of the third millennium education faces new challenges which are the result of new socio-political and cultural contexts” (p. 5).

Australian society has diversified dramatically in the last 40 years, with people from many cultures adopting Australia as their home. Table 2.3 details the settlers to Australia, by region of birth, for 2001-02 whilst Table 2.4 gives similar information for 1991-92. Schools are becoming increasingly multicultural in their scope and clientele (Falk & Harris, 1983). In this, the new millennium, although Australians from many different cultural backgrounds co-exist, their demands and expectations of Catholic schools differ markedly. The contemporary Catholic school must adapt to and accommodate such demands. However, the Catholic school, through the service of its people, must become the place where the Spirit is incarnated and a place where Christ lives (Sultmann, 2004).

2.2.6 Conclusion

In this section, the first purpose was to describe the Australian Catholic school setting in order to contextualize this study and provide a basis for discussion of the research findings. Catholic schooling has evolved substantially from its humble beginnings in the early 1800s. As societal changes have occurred, so too have corresponding

changes taken place within Catholic schools. Changes include: the loss of authority of the Church as an institution; the increased role and responsibility assumed by the laity in the Church and in Catholic schools; the reduction in class sizes; the diversification of the curriculum; the greater financial and bureaucratic accountability of schools by governments; increased retention rates; the expansion of the role of the teacher and the increasing cultural diversity of students in Catholic schools.

Another purpose was to begin to identify from the literature, important environment dimensions that could be incorporated into instruments that may be used to investigate learning environments in catholic schools. The following characteristics have been identified as important in contemporary Catholic schools:

- Being relational, especially in the student – teacher, teacher – teacher, student – student, and administrator – teacher areas
- Being community orientated with genuine care and concern for others by all members
- Participatory decision – making using relational power
- Meeting the individual needs of the students
- Opportunities for personal and spiritual growth
- Mission consensus
- Teachers demonstrating Christian witness (i.e. teachers as ministers)
- Wider school community support
- Resourcing schools adequately so that teachers and students can work without hardship or pressure (Dorman, 1994).

It is important to note that relationships and personal growth characteristics feature strongly in this list, and therefore should be incorporated into the development of any instrumentation that is designed to investigate classroom learning environments of Catholic schools. Unless Catholic schools continue to demonstrate clear and accountable ways to ensure their authenticity, then moves to greater inclusiveness are fraught with difficulty. Clearly, there is a continuing and vital need for each Catholic school to be authentic to the life and teachings of Christ (Congregation for Catholic Education: *The Catholic School on The threshold of The Third Millennium*, 1998).

The following sections of this chapter will investigate learning environments and cultural diversity with the aim of identifying key characteristics to be incorporated into the development of learning environment instrumentation used in the present study.

2.3 LEARNING ENVIRONMENTS

The focus of the present study was an investigation of students' perceptions of multicultural learning environments in Queensland Catholic secondary schools. Therefore, it is essential that prior learning environment research be examined to ensure that the present study builds upon and extends this research field. Specifically, the present section has five purposes. First, to provide important background information. Section 2.3.1 traces the historical development of the study of learning environments from the early 1920s to the mid 1960s. Second, Section 2.3.2 reviews the modern era of learning environment research which commenced with the independent, seminal research of Moos and Walberg in the late 1960s. Two important developments of this era were the validation of a suite of instruments for use in educational settings from primary schools to tertiary institutions, and the cross-national nature of much contemporary learning environment research. Third, Section 2.3.3 introduces some of the significant methodological issues pertaining to learning environment research, and investigates how contemporary researchers have addressed these issues. Fourth, Section 2.3.4 reviews research that falls within the *learning environment – outcome* genre and provides an in-depth review of the specific learning environment research genre in which the present study is located. Finally, Section 2.3.5 details the significance of an integrated framework to learning environment research. Section 2.3.6 summarizes the main issues raised by this review and their implications for this present research.

2.3.1 Historical Perspectives of Learning Environment Research

This section traces the historical development of the study of learning environments from the 1920s to the 1960s. Past comprehensive literature overviews which synthesize much of the learning environment work have grown out of the work of Moos and Walberg over 30 years ago. However, research into classroom learning environments began well before the work of Moos and Walberg. Learning environment research has been documented as far back as the work of Thomas (1929). She used largely descriptive accounts of observations of children (i.e. case histories and diary notes). However, these descriptive accounts contained experimental errors and experimental design flaws, making them inappropriate for scientific analysis.

Another early pioneer in the area of learning environment research was the social psychologist Kurt Lewin (1936) who developed a Field Theory for social sciences. Lewin investigated the effects of three leadership styles, democratic, autocratic and laissez-faire, on classroom behaviour and recognised that both the environment and its interaction with the personal characteristics of the individual are potent determinants of human behaviour. He stated that behaviour (B) was a function of two independent variables, Person (P) and Environment (E) with a simple equation $B = f(P,E)$ summarizing his theory. Lewin (1936) and Lippitt (1940) found that leadership styles affected classroom behaviour. Whilst the two studies were independent of each other, their conclusions showed a degree of commonality.

Anderson, Brewer and Reed (1946) investigated the influence of a teacher's classroom personality on a student's behaviour and a student's classroom behaviour towards their classmates. They developed 23 teacher behaviour categories and seven student behaviour categories, with behaviour classified as *socially integrative or dominative*. Because their data was based only on four teachers and four students, it was impossible to estimate the reliability of any of the scores proposed for comparing different teachers, classes or occasions in the same class. Moreover, it was recognized

that the validity of teacher behaviour would have been higher if the proposed categories were internally consistent (Anderson & Brewer, 1945).

Murray (1938) proposed a *Needs-Press* Model, which allowed the analogous representation of internal personal and external environment press in common terms. Within the Needs-Press model, it is contended that need and press interact to produce and guide behaviour. In a school, students have particular needs and the school's press either satisfies or frustrates these needs. Murray introduced the term *Alpha Press* to describe the environment assessed by a detached observer, and the term *Beta Press* to describe the environment as perceived by milieu inhabitants. Because it involves direct observations, alpha press is considered highly objective. Beta press examines the environments perceived and experienced by the individual and, in a classroom setting, is dependent upon the subjective assessment of students and teachers. Murray believed that beta press exerted the greater influence on behaviour because it is what is felt, interpreted and responded to by the person (Hjelle & Ziegler, 1981). Stern, Stein and Bloom (1956) and Pace and Stern (1958) popularised and extended the use of the *Needs-Press* Model. Stern (1970) extended the *Needs-Press* model to develop a theory in which the degree of person-environment congruence is related to student outcomes (Fraser, 1986.)

Researchers continued to investigate learning environments after the ground-breaking work of researchers such as Murray (1938) and Lewin (1936). The work of Whitall (1949) contradicted previous research. Whitall did not believe that students' interactions, as suggested by earlier studies, were as important as teachers' interactions. He suggested that it should be possible to measure socio-emotional climate in terms of teacher behaviour alone, and developed a series of categories to encompass all types of statements that teachers use in a classroom. Moreover, Whitall (1949) found that different teachers produced different climates with the same group of students.

As the 1950s approached, classroom climate research became more empirically orientated. The streams of thought captured for this orientation included Lewin's (1936) Field Theory, Murray's (1938) *Need-Press* Model, and Thelan's (1950) Educational Dynamics Model. An analysis of time-lapse pictures, recorded in the

classroom by sensitive and trained educators using newly developed measures, enabled hypotheses, which were often compared with the results of standardized tests, to be derived. Whithall (1949) was one of the researchers to adopt this approach. In his study, he renamed the interactions between students and students, and between students and teachers as the *Social Emotional Climate*.

The work of Bovard (1951) in the learning environment field was varied. Much of his research was centred on the interaction of students from different cultural and socioeconomic backgrounds within a classroom setting. Bovard concluded that the level of social interaction in the classroom will influence the individual student's perceptions, feelings and interpersonal relations, and perhaps even the student's personality development. According to Isaac and Michael (1978), the study conducted by Bovard suffered methodological error, which they described as the 'guinea pig effect'. However, because of its racial, denominational and socioeconomic implications, it was a landmark study in that it investigated classroom climate and the qualitative effects it may have on its student members (Chavez, 1984).

Medley and Mitzel (1958) developed the *Observation Schedule and Record (OSCAR)* in order to obtain some indices of objective data (i.e. classroom behaviour) to solve practical problems such as how to select students likely to become successful teachers. This work was followed by a proliferation of studies aimed at developing measures of student and teacher behaviours.

The *Need-Press* theory was further popularised by the work of Pace and Stern (1958) who used high inference measures of educational environments. Unlike the present study, their study focused on higher education institutions rather than secondary schools, and assessed the environment of the whole college rather than the classroom environment. Stern (1970) later drew on Murray's (1938) work and formulated a theory of *Person-Environment Congruence* in which complementary combinations of personal needs and environmental press enhance student outcomes. Getzels and Thelen (1960) developed a model for the class as a social system which stated that, in school classes, personality needs, role expectations and classroom climate interact to predict behaviour including learning outcomes. This basic premise of predictive behaviour and the influence of the environment on student outcomes is central to this study.

Many of the early classroom environment researchers were proponents of low inference measurements (Rosenshine & Furst, 1971). Rosenshine (1970) defined low inference measurement as recording specific phenomena (e.g. the number of student questions). This low inference measurement of classroom environment was a largely descriptive process with flaws in analysis and experimental design. Despite these apparent design flaws, low inference measurements dominated learning environment research until the 1960s.

In summary, research on classroom behaviour began with the early work of Thomas (1929), who was interested in the consistency of an observer's interpretation of classroom behaviour. She used three techniques in which accuracy and objectivity were the *sine qua non* of her research. Later Lewin (1936) and Lippitt (1940) found that leadership styles affected classroom behaviour. Anderson et al. (1946) also found that a teacher's classroom personality affects students' classroom behaviour. Withall (1949) renamed the observed classroom behaviour Social Emotional Climate, and developed seven categories to describe it. The 1960s brought a high sophistication to low inference measures, such as Medley & Mitzel's OSCAR (1958), Hughes's (1959) instrument based on Withall's seven categories, and the Flander's Interaction Analysis System (Flanders, 1970).

The work of the early researchers such as Murray, Lewin, Pace, Stern, Whithall, Thelan, Bovard, Medley and Mitzel built on the research work of those before them. Whilst not directly employing the methodological approaches of these early learning environment researchers, the present study owes some of its methodological underpinnings to these people who pioneered contemporary learning environment research methodology.

2.3.2 The Modern Era of Learning Environment Research

This section reviews the modern era of learning environment research which commenced with the independent research of Moos and Walberg in the late 1960s. The field of classroom environment research and a range of measuring instruments

are reviewed comprehensively in various sources (Chavez, 1984; Fraser, 1981, 1986a, 1986b, 1987; Moos, 1979; Walberg, 1979). Only within the last 40 years has a significant number of research studies focused on the conceptualization, assessment and study of students' perceptions of the psychological and social characteristics of the classroom learning environment (Fraser & Fisher, 1982). Fraser (1986) has provided a comprehensive overview of past research studies and the effects of classroom environment upon a variety of both cognitive and affective outcomes. The formal study of classroom learning environment characteristics has a rich, but rather recent history. Major syntheses of research on learning environments (Fraser, 1986; Fraser & Walberg, 1981, 1991) clearly show that learning environment characteristics demonstrate incremental validity in predicting student achievement, can be cross culturally replicated, are useful in curriculum evaluation studies and can provide teachers with useful information to improve classroom environment characteristics.

The birth of the modern era of learning environment research was some 40 years ago when Walberg and Moos began their seminal independent programs of research. In the late 1960s Walberg developed the early version of the now widely used *Learning Environment Inventory* as part of the research and evaluation activities of the Harvard Project Physics (Anderson & Walberg, 1968a; Walberg, 1968; Walberg & Anderson, 1968b, 1968c). Around the same time Moos began developing the first of his world renowned social climate scales, including those for use in psychiatric hospitals (Moos & Houts, 1968) and correctional institutions (Moos, 1968), which lead ultimately to the development of the widely known and used *Classroom Environment Scale* (CES) (Moos, 1968). The Classroom Environment Scale has been used as a source of predictor and criterion variables in a variety of studies, and has established relationships between the nature of the classroom environment and science students' achievements of several inquiry skills and science related attitudes (Fraser & Fisher, 1982). In studies which have used the Classroom Environment Scale as a source of criterion variables, Trickett (1978) reported differences between five types of public schools. Evans and Lovell (1979) found differences among classes following alternative educational programs and Trickett, Trickett, Castro and Schaffner (1982) found differences between single sex and coeducational schools.

Comprehensive literature reviews of the early work of Walberg and Moos on classroom environments can be found in several books (Fraser, 1981, 1986a; Moos, 1979; Walberg, 1979), in several literature reviews (Anderson & Walberg, 1972; Chavez, 1984; Randhawa & Fu, 1973; Walberg, 1976), and in monographs sponsored by the American Educational Research Association Special Interest Group (SIG) on the study of learning environments. Moreover, the relationships between students' cognitive and affective learning outcomes and their perceptions of psychosocial characteristics of their classrooms were established using data from previous climate research in a meta-analysis by Haertel, Walberg and Haertel (1981).

In developing the Classroom Environment Scale, Moos (1974) found that three general categories can be used in conceptualising the individual dimensions characterising diverse psychosocial environments. These findings emerged from Moos's work in a variety of environments including hospitals, prisons, the military and schools. The first dimension was the Relationship Dimension which identified the nature and intensity of personal relationships within the environment, and assesses the extent to which people are involved in the environment and the extent to which they support and help each other. Second, the Personal Dimension assesses the basic directions along which personal growth and self-enhancement tend to occur. Third, the System Maintenance and System Change Dimension involves the extent to which the environment is orderly, clear in expectations, maintains control and is responsive to change.

Work in the area of learning environments has been conducted across many countries, school types and subject areas. In Australia, the research of Fraser (1986); Fisher (1992); Waldrip and Giddings (1995) is central to the area of learning environment research. In Germany, Wolf (1983) has contributed, whilst Levy, den Brok, Wubbels and Brekelmans (2003), Wiestra, Kanselaar, van der Linden and Lodeewijks (1999), Wubbels, Brekelmans and Hooymayers (1991), and Wubbels, Creton, Levey and Hooymayers (1993) are involved in the area of learning environment research in The Netherlands. Similarly, Ell and Olivier (2001), and Waxman and Huang (1997) were involved in the study of learning environments in The United States. More recently, researchers including Aldridge and Fraser (1999), Dhindsa and Fraser (2003), Huang and Fraser (1997), Fraser and Chionh (2000), Jegede, Agholor and Okebukola (1995),

Majeed, Fraser and Aldridge (2002), Margianti, Fraser and Aldridge (2001), Park (2001), and Riah and Fraser (1998) have undertaken an increasing amount of research in Asia, the South Pacific, Brunei, and Africa.

Educational researchers internationally have paid substantial attention to the studies involving students' perceptions of classroom learning environments. Bloom (1980) led a new direction for educational research and examined a variety of alterable variables in order to explore new views of learners and their potential for learning. He believed that there were a number of identifiable variables, such as quality of teaching and home conditions, which if investigated by educators, could give insight into the teaching and learning processes in schools. By investigating such external factors it was contended that further insight could be gained into the association between learning environments and student outcomes.

An important aspect of much of the modern work in learning environment research is that the students' perceptions are being employed as indicators of the learning environment. That is, the environment is defined in terms of the perceptions of students and teachers. Walberg (1974) advocated the use of student perceptions to assess environments. Walberg's Perceptual Model (1976) of the learning process (see Figure 2.4) shows how perceptions are thought to influence student learning. This model suggests that student learning involves student perceptions as mediators in the learning process.

Fraser and Walberg (1981) outlined a number of advantages that student perceptual measures have over other observational techniques. First, perceptual measures are more economical time wise. Second, they are more realistic as they are based on student's experiences over many lessons. Third, they involve the pooled judgments of all students in a class and not just that of a single observer. Fourth, perceptual measures of the classroom environment typically have been found to account for considerably more variations in student learning outcomes than other directly observed variables.

The relationship between students' cognitive and affective learning outcomes and their perceptions of psychosocial characteristics of their classrooms was established

from previous research in the ambitious cross cultural metal analysis by Haertel, Walberg and Haertel (1981). McRobbie and Fraser (1995) have confirmed the link between the classroom environment and student outcomes by using the *Science Laboratory Environment Inventory* (SLEI) across 92 chemistry classes in Brisbane. Further studies in this area include Huang (2003), and Waldrip and Giddings (1993, 1995).

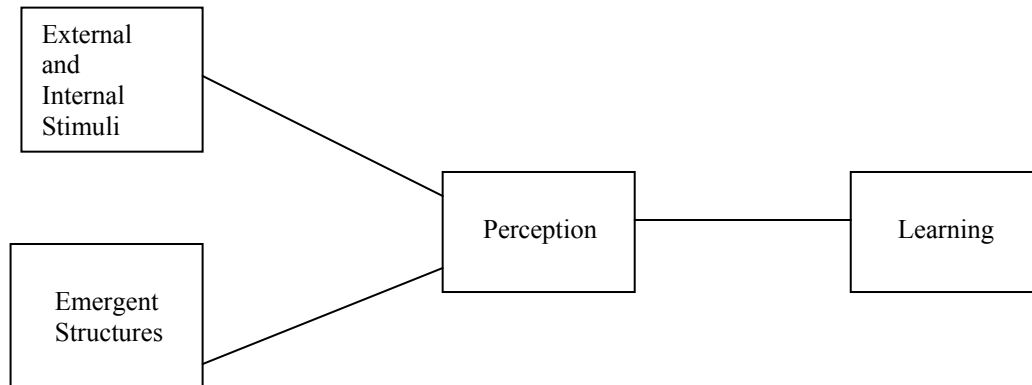


Figure 2.4

Walberg's Perceptual Model of Student Learning

Source: Walberg (1976, p. 143)

Learning environment research has not just been confined to using student perceptions. A number of research projects have made use of teachers' perceptions of their learning environment, both actual and preferred, in order to make predictive comments on teaching and learning practices (Margianti, Fraser and Aldridge, 2001). Research in the United States (Moos, 1979), Australia (Fraser, 1982), The Netherlands (Wubbels, Brekelmans, Creton & Hooymayers, 1990; Wubbels, Brekelmans & Hoomayers, 1991), Israel (Raviv, Raviv & Reisel, 1990), Asia and the Pacific Islands (Waldrip & Giddings, 1993,1995) and the United States (Levy, den Brok, Wubbels & Brekelmans, 2003) have compared students' and teachers' perceptions of classroom environments, and found that students perceived their classrooms more positively than teachers. In line with previous learning environment

research, the present study employed students' perceptions as the appropriate mechanism for collecting data on classroom environments.

Investigation into the characteristics of learning environments has been important in understanding a variety of associations that exist within classroom learning environments. Research on classroom environments has focused historically on its psychosocial dimensions – those aspects of the environment that focus on human behaviour in origin or outcome (Boy & Pine, 1988). Reviews of classroom environment research by Dorman (2002), Fraser (1998b), Goh and Khine (2002), and Khine and Fisher (2003) have delineated at least 10 areas of classroom environment research. Such areas include: the evaluation of educational programs and curriculum evaluation efforts (Fraser, 1979,1981); validation of performance assessment instruments for school principals (Ellett & Walberg, 1979), and beginning teachers (Ellett, Capie & Johnson, 1980; Dhindsa & Fraser, 2003); emerging models of educational productivity (Walberg, 1978, 1986); theories of various learning environments (Moos, 1974, 1979); comparisons of teachers' and students' perceptions of actual and preferred learning environments (Fraser, 1982; Levy, den Brok, Wubbels & Brekelmans, 2003); and large scale studies of effective schools relating school climate variables to pupil achievement (Brookeover, Schweitzer, Schneider, Beachy, Flood & Wiesenbaker, 1978). Other studies have investigated the influence of a host of independent variables on classroom environment. These include: class size (Anderson & Walberg, 1972; Walberg, 1969); year level (Huang, 2000; Weinburgh, 1994; Welch, 1979); student gender (Fraser, McRobbie & Giddings, 1993; Schneider & Coutts, 1982; Wong & Fraser, 1994, 1995; Woolfolk,2001); teacher gender (Anderson, 1971; Joiner, Malone & Haines, 2002; Lawrenz & Welch, 1983; Rennie & Parker,1996; Waldrip & Giddings, 1995); school type (Fraser, Williamson & Tobin, 1987; Schneider & Coutts, 1982; Tricket,1978; Trickett, Castro & Schaffner,1982); subject type (Dorman, Fraser & McRobbie, 1997; Goh & Fraser,1998; Read & Waxman, 2001); student efficacy (Dorman, Adams & Ferguson, 2002); and ethnicity (Banks & Banks, 1995; Gollnick & Chinn,1997; Waldrip & Giddings, 1995). In the area of multicultural learning environments, studies investigating factors such as student cultural background (den Brok, Levy, Rodriguez & Wubbels, 2002, 2003; Dhindsa & Fraser, 2003; Levy, den Brok, Wubbels & Brekelmans, 2003; Levy, Wubbels & Brekelmans, 1996; Waldrip, 1996); teacher

cultural background (den Brok et al., 2002, 2003; Levy et al., 1996); acculturation (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003); family cultural environment (den Brok et al., 2003; Levy, Wubbels & Morganfield, 1997); and cultural composition of the class (Dhindsa & Fraser, 2003; Evans & Fisher, 2000; Marjoribanks, 2003) have been conducted. A detailed review of these studies and the many others that exist in the field of learning environment research is beyond the scope of this thesis. However, it must be acknowledged that the study of learning environments is contingent upon the development of valid and reliable measuring devices.

It is evident that much work has been carried out in the area of learning environments since the early work of Thomas (1929). Although much of this earlier work made use of low inference measurements which were flawed statistically and experimentally, it did provide a basis for the more recent and experimentally sound high inference measures of the mid-1960s and beyond. The development of reliable and valid high inference measures such as the Classroom Environment Scale (CES); My Classroom Inventory (MCI); Learning Environment Inventory (LEI); Science Learning Environment (SLEI); Constructivist Learning Environment Survey (CLES); What is Happening in this Class? (WIHIC) Questionnaire; Questionnaire on Teacher Interaction (QTI); Cultural Learning Environment Inventory Questionnaire (CLEQ); Socio-Cultural Environment Scale (SCES); The Students' Cultural Learning Environment Questionnaire (SCLEQ) and Multicultural Classroom Learning Environment Inventory (MCLEI) laid the foundation and demonstrated that the predictability of students' cognitive, affective and behavioural outcomes are related to students' perceptions of psychosocial characteristics in classrooms. Each instrument has its unique origins and caters for different purposes and backgrounds. Whilst the scope of the present study does not permit a detailed examination of the myriad of classroom environment instruments available, Tables 2.1 and 2.2 detail some information about some of the instruments relevant to the present study. Table 2.1 details information pertaining to a number of classroom environment instruments including the Classroom Environment Scale (Moos & Trickett, 1987) and the Learning Environment Inventory (Fraser, Anderson, & Walberg, 1982). Table 2.2 details classroom environment instruments specifically designed to investigate multicultural classroom environments. Instruments such as the Cultural Learning

Environment Questionnaire (Waldrup & Fisher, 1996) and the Multicultural Classroom Learning Environment Inventory (Giddings & Waldrup, 1997) are reviewed.

The present study, in investigating students' perceptions in multicultural classroom environments in Queensland Catholic secondary schools is seated within this domain of learning environment research.

2.3.3 Issues in the Assessment of Learning Environments

This section introduces some of the significant methodological issues pertaining to learning environment research. In Section 2.3.1, it was revealed that Murray (1938) distinguished between alpha press (the environment as observed by an external observer) and beta press (the environment as perceived by milieu inhabitants). This concept was extended by Stern, Stein and Bloom (1956) who distinguished between the idiosyncratic view of the environment that each person has (private beta press) and the shared view about the environment that members of a group hold (consensual beta press). Private and consensual beta press could differ from each other, and both could differ from the detached view of alpha press of a trained non-participant observer. In designing classroom environment studies, researchers must decide whether their analysis will involve the perceptual scores obtained from individual students (private press) or whether these will be combined to obtain the average of the environment scores of all students within the same class (consensual press). In classroom environment studies, consensual beta press often has been measured by using the class mean, which has been based on the scores of all students in the class as the unit of analysis (Fraser, 1986). This is partially due to the fact that it is more convenient and practical in a school setting to administer an instrument to the whole class at the same time. This convenience factor has resulted in individual student scores being averaged to form a class mean for each of the scales being measured.

The importance of the unit of analysis issue to learning environment research has been acknowledged over the past 30 years (Burstein, 1978; Larkin & Keeves, 1984; Raudenbush & Bryk, 1986). It is imperative that the appropriate level of analysis is chosen that best suites the hypothesis being tested. If the individual is the unit in the

hypothesis, then a private beta press should be adopted. It is also important that the units of statistical analysis be consistent with the primary sampling unit. If this is not adhered to, then the requirement of independence of sampling units will be violated (Fraser, 1991). The results obtained from a mismatch of sampling unit and statistical unit must then be questioned because of the unjustifiably small estimate of the sampling error (Ross, 1978).

TABLE 2.1
OVERVIEW OF EIGHT INSTRUMENTS FOR ASSESSING CLASSROOM ENVIRONMENTS

Instrument	Level	Items per scale	Scales Assessed by Instrument	Reference
Learning Environment Inventory (LEI)	Secondary	7	Cohesiveness, Friction, Favouritism, Cliqueness, Satisfaction, Apathy, Speed, Difficulty, Competitiveness, Diversity, Formality, Material Environment Goal Direction, Disorganisation, Democracy Involvement, Affiliation,	Fraser, Anderson, & Walberg, 1982
Classroom Environment Scale (CES)	Secondary	10	Teacher Support, Task Orientation, Competition, Order & Organisation, Rule Clarity, Teacher Control	Moos & Trickett, 1987
Individualised Classroom Environment Questionnaire (ICEQ)	Secondary	10	Personalisation, Participation, Independence, Investigation, Differentiation	Fraser, 1990
My Class Inventory (MCI)	Primary	6-9	Student Cohesiveness, Friction, Satisfaction, Difficulty, Competitiveness	Fraser, Anderson, & Walberg, 1982
College and University Classroom Environment Inventory (CUCEI)	Tertiary	7	Personalisation, Involvement, Student Cohesiveness, Satisfaction, Task Orientation, Innovation, Individualisation	Fraser & Treagust, 1986
Science Laboratory Environment Inventory (SLEI)	Secondary, Tertiary	7	Student Cohesiveness, Open-Endedness, Rule Clarity, Material Environment	Fraser, McRobbie, & Giddings, 1993
Constructivist Learning Environment Survey (CLES) (revised version)	Secondary	7	Personal Relevance, Uncertainty, Critical, Voice, Shared Control, Student Negotiation	Taylor, Fraser, & White, 1994
Questionnaire on Teacher Interaction (QTI)	Primary, Secondary	7-9	Leadership, Helpful/Friendly, Understanding, Student Responsibility/Freedom, Uncertain, Dissatisfied, Admonishing, Strict	Wubbels & Levy (1993)

TABLE 2.2
OVERVIEW OF SEVEN INSTRUMENTS FOR ASSESSING MULTICULTURAL CLASSROOM
ENVIRONMENTS

Instrument	Items per Scale	Scales Assessed	Reference
Cultural Learning Environment Questionnaire (CLEQ)	5	Collaboration, Competition, teacher Authority, Congruence, Modelling, Deference	Waldrip & Fisher, 1996
You and Your Classroom (YYC)	5	Collaboration, Competition, Teacher Authority, Congruence, Modelling, Deference, Gender Equity, Communication	Waldrip & Fisher, 1996
What is Happening in this Classroom (WIHIC)	8	Student Cohesiveness, Teacher Support, Cooperation, Task Orientation, Involvement, Investigation, Equity	Fraser, McRobbie & Fisher, 1996
Student Cultural Learning Environment Questionnaire (SCLEQ)	5	Collaboration, Competition, Teacher Authority, Communication	Waldrip & Fisher, 1996
Classroom Environment Questionnaire (CEQ)	9-10	Student Affiliation, Interactions, Cooperation, Task orientation, Order & organisation, Individualisation, teacher Control	Dorman, 1994
Multicultural Classroom Learning Environment Inventory (MCLEI)	5	Communication, Competition, Authority, prior Knowledge, Knowledge Transmission, Relevance	Gidding & Waldrip, 1997

The unit of analysis has received considerable attention in the context of testing hypotheses using already developed learning environment instruments. Sirotnik (1980) considered it to be an essential issue to be taken into consideration when conducting research, and identified three types of analysis that have been used in learning environment research. First, *Total Analysis* uses the individual as the unit of analysis and ignores grouping factors. Second, *Within Analysis* uses the individual scores but removes the group effect before analysis. Third, *Between Analysis* uses the group as the unit of analysis. It requires the class means to be the unit of analysis for studies of classroom environment.

The above discussion indicates that it is crucial that the unit of analysis is carefully considered. It suggests that if the primary sampling unit is the individual then it would be appropriate to measure the private beta press for each individual, with the individual mean as the unit of analysis. This is the approach that will be employed in the present study. Details of the level of analysis and statistical analysis will be discussed in Sections 3.2.4 and 3.3.3.

From the late 1960s considerable changes to learning environment research have taken place. Included in these changes are the use of students' perceptions, the effect of variables on students' cognitive and affective outcomes, and the proliferation of instruments that have been used to investigate a various aspects of learning environments across a variety of settings. Another important change in modern learning environment research has been the introduction of high inference measurements (Fraser, 1981). Earlier researchers employed low inference measurements of the classroom climate, which made use of experimental design instrumentation that was largely descriptive, flawed, and employed analysis which questioned the reliability and validity of the study. It was only in the 1960s that high inference measurements emerged with researchers such as Moos, Sinclair, Stern, Pace and Walberg. They used earlier work as their basis, but modified it to be in the format of self-administered questionnaires.

High inference measurement requires the respondents to make judgments about the meaning of classroom events (e.g. Degree of Teacher Friendliness) and thus is concerned with the psychological significance that classroom events have for students

and teachers (Creton, Wubbels & Hooymayers, 1988, 1992; Waldrup & Giddings, 1993, 1995). A variety of instruments have been developed and mentioned previously in this chapter. Instruments such as the Learning Environment Inventory (LEI: Walberg & Anderson, 1968a) and the Classroom Environment Scale (CES: Moos, 1968) are landmark examples of high inference measurements. These, along with many other high inference instruments have been used by researchers to investigate the predictability of students' cognitive and affective outcomes from their perceptions of their classroom environment.

Clearly students' perceptions have been very useful in helping educators to understand classroom process (Gage, 1972; Fraser, 1986; Walberg, 1976) and have been found to be an effective means for improving classroom environments (Fraser, 1985). Researchers such as Fraser (1985) and Waxman & Duschl (1987) have suggested that there is considerable potential for student feedback using classroom environment instruments for guiding improvements in teaching

Over a number of decades many high inference instruments have been developed, administered and validated. They have been successfully used to assess the characteristics and impacts of the social environments with classrooms. Because of the extensive and well documented evidence of the reliability of high inference measurements it is intended to use such instruments and measurements in this present study.

2.3.4 Association Between Learning Environments and Student Outcomes

The strongest tradition in previous classroom environment research has investigated associations between students' cognitive and affective learning outcomes and their perceptions of the learning environment (Fraser, 1994; Fraser & Chionh, 2000; Fraser & Fisher, 1982; Goh & Fraser, 1998; Haertel, Walberg & Haertel, 1981; Henderson, Fisher & Fraser, 1994; McRobbie & Fraser, 1993; Riah & Fraser, 1998). Numerous research programs have shown that students' perceptions account for appreciable amounts of variance in learning outcomes, often beyond characteristics attributable to

students' backgrounds. The practical implication from this research is that student outcomes might be improved by creating classroom environments found empirically to be conducive to learning (Fraser, 1998a; Goh, Young & Fraser, 1995; McRobbie & Fraser, 1993). If factors that account for variance in achievement could be identified, then it is more likely that intervention strategies could be developed to improve achievement. According to O'Reilly (1975), one of the most frequently asked questions by educational researchers is: What accounts for individual variation in student academic achievement in the classroom? This study intends to investigate multicultural classroom environments in Queensland Catholic secondary schools and ascertain if there are associations between such environments and cultural backgrounds.

It is evident that studies of associations between outcome measures and classroom environment perceptions of both teachers and students have involved a variety of cognitive and affective outcome measures, a variety of classroom environment measures and a variety of samples ranging across numerous countries, subject areas, age levels and school types.

In a study conducted by Goh and Fraser (1998), involving primary school mathematics classes in Singapore, analysis and hierarchical linear modelling confirmed the consistent and strong relationship between the nature of the classroom environment and student outcomes found in past research. In their study, Goh and Fraser (1998) used the Questionnaire on Teacher Interaction (QTI) and a modified version of the My Class Inventory (MCI) to establish associations between student cognitive and affective outcomes and perceived patterns of teacher-student interaction. In particular, higher cognitive outcomes were associated with better classroom teacher leadership, more helping/friendly classroom environments and teacher behaviours that demonstrate understanding and empathy towards students. Additionally, the affective outcome measure, student liking and interest in mathematics, was related positively with improved levels of student cohesion and reduced levels of classroom friction.

Dorman, McRobbie and Foster (2002) conducted a study involving 1,317 secondary students in 17 Sydney catholic secondary schools and found statistically significant

positive associations between the environment in religious education classes and assessed by the 7-scale Catholic School Classroom Environment Questionnaire (CSCEQ) and four dimensions of students' attitudes to Christianity. A total of 21 of the 28 simple Pearson correlation coefficients were statistically significant ($p < .05$), a result which is about fifteen times which could be expected by chance alone.

The importance of the work of the Waldrup and Fisher (1996) for this study is that if students from different cultural backgrounds have different perceptions of their classroom environments, then teacher interpersonal behaviours and strategies may be adapted to best suit the students. Section 2.4 will further examine the issues pertaining to cultural diversity.

Another study closely aligned to the work of Waldrup and Fisher (1996) was that of Giddings and Waldrup (1997). In this study, Giddings and Waldrup investigated how students in culturally diverse classrooms perceived their learning environment and examined the relationships that exist between students' cultural backgrounds and the students' expectation of the learning processes, the perceptions of their preferred learning environment, their preferred instructional strategies and their understanding of and attitudes towards science. This study utilized the *Multicultural Classroom Learning Environment (MCLEI)* that incorporated the four dimensions of culture as identified by Hofstede (1984): *Power Distance*, *Uncertainty Avoidance*, *Individualism*, and *Masculinity/Femininity*. In administering the MCLEI to over 2000 secondary school students, Giddings and Waldrup (1997) found that female students preferred a higher respect for authority and were more likely to comply with power, whilst male students were less threatened by competition. They also found that more positive attitudes towards science were strongly associated with student preferences for greater sharing of ideas, that students were less threatened by competition within the class, were more accepting of the power distribution within the class, held a more favourable view of out of school relevance of science material, and were generally supportive of teacher attempts to integrate both prior knowledge and previous learning approaches to the new learning tasks. The study by Giddings and Waldrup (1997) also revealed that when students find the manner with which things are learned at home clashes with their school based learning experiences, they find school a somewhat confusing experience. Further analysis revealed that students who had a high respect

for authority saw their preferred class environment as being one which is characterized by a higher level of relevance, order and organization. Other recent studies investigating multicultural learning environments include the work of Jegede, Agholor and Okebukola (1995) who administered the *Socio-Cultural Environment Scale* (SCES) to Nigerian students and the work of Dhindas and Fraser (2003) who administered the *Cultural Learning Environment Questionnaire* (CLEQ) to students in Brunei. These studies, along with the research of Waldrip and Fisher (1996) and Giddings and Waldrip (1997), examined cultural diversity in learning environments and have relevancy to the present study as it examined the perceptions of students from a variety of cultural backgrounds across a range of school types, subject areas and year levels.

2.3.5 An Integrated Framework

Individuals are affected by the social matrix in which they are embedded. In recognition of this fact, educational researchers have pursued ways to conceptualize and measure learning environments and their determinants and impacts. As indicated in Sections 2.3.2 and 2.3.3, fundamental advances have been made in the last 40 years in the area of learning environment research, with new assessment procedures and advanced statistical analysis allowing the identification of the most salient aspects of classroom settings. Such methods can be used to describe and identify distinctive types of learning environments, to examine how learning environments influence student morale and academic performance, to seek understanding of variations in social climate, to monitor the process and adequacy of implementation of new instructional programs, and to provide information that can help educators create more satisfying and effective educational settings (Anderson, 1982; Chavez, 1984; Ellett, 1986; Fraser, 1986; Moos, 1979). The formulation of an integrated conceptual framework is necessary to reflect more adequately the complex interplay of real life processes. It allows the placing of learning environments in context, and allows consideration of how characteristics and influences of classrooms are altered by other factors.

A systems framework, as depicted in Figure 2.5, allows the consideration of both physical and social aspects of the learning milieu and their determinants and effects. It

emphasizes how individuals select and alter educational settings as well as the impact that these settings have on them. It allows the recognition of influences of other life contexts, such as family, that carry over into the school and classroom and can have consequences for educational outcomes. A systems perspective is also consistent with the idea that the meaning and outcome of educational programs must be considered in a broad social context (Walberg, 1983).

The model shown in Figure 2.5 depicts the Environmental System (Panel I) as ongoing stresses and social resources in different life areas, including those in the school and classroom, as well as other aspects of an individual's life, such as family and peer group. The Personal System (Panel II) encompasses the individual's demographic characteristics and such personal resources as self esteem, cognitive and intellectual ability, general problem solving skills, and needs and value orientations.

The model illustrates how Life Crises and Transitions (Panel III), which includes adapting to change and responding to the array of influences at school, and the Environmental and Personal Factors that foreshadow them (Panels I and II) can shape Cognitive Appraisal and Coping Responses (Panel IV), which are mediating variables involved in the process of person-environment interaction. They can also influence Effectiveness (Panel V), which involves examining the results of such efforts and interactions. The bi-directional paths present these processes as transactional and show that reciprocal feedback can occur at each stage.

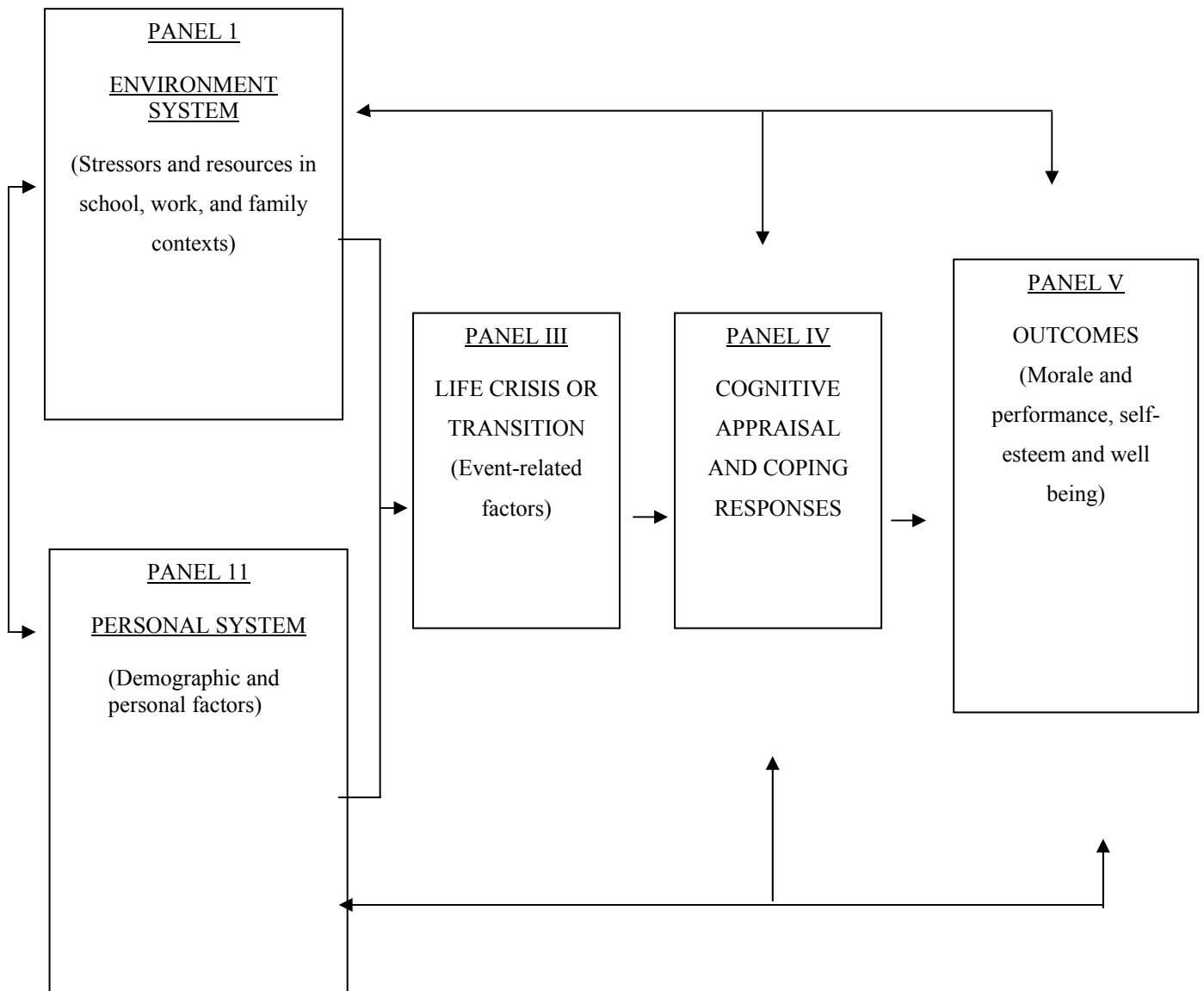


Figure 2.5

A Conceptual Model of Links between School and Non-school Factors and Student Outcomes

Source: Moos (1991, p. 30)

2.3.6 Conclusion

Section 2.3 outlined three important issues. First, a review of the historical development of learning environment research and an examination of the contemporary work in this field of research. Second, an examination of the issues of associations between learning environments and students' outcomes. Third, setting the context of this study.

From the early work of Thomas (1929), Lewin (1936) and Murray (1938), learning environment research has progressed from low inference, observational methods through to the more popular perceptual, high inference method of research. Up until the 1960s, the low inference studies, despite design flaws, dominated learning environment research.

Through the work of Moos (1968) and Walberg (1968) and the development of the Classroom Environment Scale (CES) and the Learning Environment Inventory (LEI) respectively, learning environment research entered a new era. The early pioneering work of Moos and Walberg on perceptions of classroom environments has facilitated and developed major research programs and spawned a plethora of other research.

Bloom (1980) led a new direction in educational research and examined a variety of alterable variables in order to explore new views of learners and their potential for learning. Walberg (1976) developed the Perceptual Model in which students' perceptions were used as indicators of many aspects of learning environments. The use of student perceptions has currently remained a major focus of research till. With the use of students' perceptions has come the development of associations between learning environments and students' outcomes. Fraser (1981) noted that "The strongest research tradition during the last decade of classroom environment research, has involved investigation of the predictability of students' cognitive and affective learning outcomes from their perceptions of classroom environments" (p. 46).

The present study examined the multicultural classroom environments in Catholic schools and investigated different types of schools, different year levels and different subjects. It is well documented that staff in schools can influence students' perceptions and that staff in Catholic schools play a pivotal role. It is therefore imperative that the role and impact of the staff is considered. The present study however, did not examine teacher perceptions of classroom environments. The association between students' perceptions of their learning environments and student outcomes is well documented. In the following sections on cultural diversity it will be shown that in many cultures, the importance and impact of the family on students' education is very important. Although the present study investigated classroom environments and not family environments, it is important to consider the influence of family on students' perceptions, particularly in different cultural groups.

In examining an array of previous research associating students' perceptions and their classroom learning environments, the context for the present study has been laid. The examination of the work of Waldrip and Fisher (1996) and Waldrip and Giddings (1997) on cultural diversity and learning environments, as well as previous research examining the effects of variables such as school type, family, culture, subjects and staff on students' perceptions is an important foundation for the present study . By linking the sections on Catholic schools and cultural diversity with previous learning environment research, the specific context of this study has been established.

2.4 CULTURAL DIVERSITY

This section will examine literature pertaining to cultural diversity. More specifically, it will detail literature regarding cultural diversity in Australia and within Australian Catholic schools. Section 2.4 and 2.4.1 will examine the changing nature of cultural diversity and the issue of multiculturalism in contemporary Australia and map the evolution of policy development over the last 50 years. Sections 2.4.2, 2.4.3, and 2.4.4 will examine the key roles of schools, students and families respectively in the context of cultural diversity. Section 2.4.5 will summarize the issues raised.

The issue of cultural diversity in Australia is not a new phenomenon. Australia has always been a culturally diverse society. Even before European settlement, the continent was inhabited by Aboriginal groups, each with their own distinct and different language and cultures. European settlement brought further diversification of Australian society. This trend has continued to the present day. Although, at the present time, Australia is more culturally diverse than ever before with a marked increase in students from non-English speaking backgrounds entering the educational system.

Cultural diversity is a term that describes the cultural and linguistic diversity of the Australian society. It recognizes that Australia is, and will remain, a culturally diverse country. It is a term used to describe public policies that manage the consequences of the diversity in the interests of the individual and society as a whole. The Australian government is committed to the recognition of the social, cultural and economic benefits of the nation's diversity and seeks to ensure that it is a positive force (Department of Immigration and Multicultural and Indigenous Affairs, 2003).

Since the end of World War II, Australia has continued to diversify culturally. The Australian government has introduced and modified policies to adjust to this cultural diversification. Al Grassby (1973), as Minister for Immigration in the Whitlam Labor government, unveiled the government's Immigration programs in an address titled, '*A Multicultural Society for the Future*' (Galligan & Roberts, 2003). In 1979, *Australia as a Multicultural Society was drafted*, whilst later in 1979, the report *Multiculturalism and its Implications for Immigration Policy* was released. The Galbally Report, *Migrant Services and Programs* was produced in 1978 and embraced multiculturalism and recommended the consolidation and expansion of a raft of welfare and education services for migrants. Galbally proposed four guiding principles. First, equal opportunity and access to programs and services. Second, that each person maintains their culture and be encouraged to appreciate other cultures. Third, that the needs of migrants are met by general program. Finally, programs should be designed in consultation with clients (Galligan & Roberts, 2003). In a report of the Review of Post Arrival Programs and Services for Migrants, *Migrant Services and Programs*, the Prime Minister in 1978, Mr William McMahon, stated:

The Government accepts that it is now essential to give significant further encouragement to develop a multicultural attitude in Australian society. It will foster the retention of the cultural heritage of different ethnic groups and promote intercultural understanding.

(Hansard, House of Representatives, 30 May, 1978, p. 2731)

In 1979, the Australian Institute of Multicultural Affairs Act was passed. Its objective was to raise awareness of cultural diversity and promote social cohesion, understanding and tolerance. In 1982, the Ethnic Affairs Taskforce report, *Multiculturalism for all Australians: our Developing Nationhood* was released and positioned multiculturalism at the heart of Australia's nationhood and national identity. In 1987 the Office of Multicultural Affairs was established by the then Labor Government to replace the Australian Institute of Multicultural Affairs. In 1994 the National Multicultural Advisory Council was established and in 1995 launched *The National Multicultural Advisory Council Report*. The report found that much had been achieved in the area of cultural diversity in Australia and recommended further initiatives. In 1997 the National Multicultural Advisory Council was commissioned to produce a report that recommended a policy and an implementation framework for the next decade, aimed at ensuring that cultural diversity was a unifying force for Australia. This report, *Australian Multiculturalism for a new century: Towards Inclusiveness*, was launched by the Prime Minister, Mr. John Howard, on 5 May 1999. In response to this report, the Australian Government launched its multicultural policy statement, *A New Agenda for Multicultural Australia*, on 9 December 1999 and established the Council for Multicultural Australia in July 2000 to implement the policy (Galligan & Roberts, 2003).

This document highlighted that, in order for multiculturalism to be a national unifying force, it needs to be inclusive. Multiculturalism is about and for all Australians. Multicultural policies and programs are not to be solely identified with immigration issues and developed for minority ethnic communities. The *New Agenda* also emphasized that multicultural policies and programs should be built on the foundation of Australia's democratic system, using the core principles of civic duty, cultural respect, social equity and productive diversity (Department of Immigration and Multicultural and Indigenous Affairs, 2003). The Council for Multicultural Australia

was established in 2000 and was given the responsibility to assist the government in promoting multiculturalism under its current policy statement *Multicultural Australia: United in Diversity*, which was formulated in 2003 (Council of Multicultural Affairs, 2005).

The evolution of multicultural policies in Australia has been rapid and diverse. Whilst it is important to encourage the identity of groups and their continued existence it is also important that these groups do not become so separate that they are competing with each other for economic, social and political power. Current policies support this view. It is important to recognise that within the diversity of the Australian society there is a common thread, namely the acceptance by all communities, however diverse, of some values such as democracy, privacy and an equality of opportunity in areas of education and economic activity (Council of Multicultural Affairs, 2005).

In examining the issue of education in a culturally diverse society, an investigation of the purposes of education in a culturally diverse society must be made. Cultural diversity is a question of attitude, behaviour, and a state of mind which enables people to live in a culturally diverse society, to share its values and be able to mix with each other in a positive and constructive way (Hamilton & Moore, 2004).

Many researchers have examined particular groups of students in regard to their world views (Anderson, 1988), styles of learning (Oakes, 1990), and attitudes (Wiggins, Atwater & Gardner, 1992). Much of this research suggests that students who come from different areas display distinctive cultures. That is, differences in attitudes, styles of learning etc, can be explained more comprehensively if the local culture is considered. Culture is learned, people are not born with a culture (Stull & Von Till, 1994). Many students come from communities with widely differing cultural practices and at times the teaching and learning strategies employed in classrooms can be perceived as being in conflict with the natural learning strategies of the learner (Levy, Wubbels & Brekelmans, 1996; Sangster, 2001; Sloneic & Del Vecchio, 1992; Waldrip, 1994). Since teachers can use practices that may inadvertently conflict with the students previous learning patterns, home environment and values, there is an increasing need for teachers to be sensitive to the important cultural milieu into which

their teaching is placed (Clairborne & Ellett, 2005; Dhindsa & Fraser, 2003; Marjoribanks, 2004; Thaman, 1993).

Okebuhola (1986) and Dhindsa and Fraser (2003) have suggested that the cultural background of the learner can have a greater effect on education than does the substantive nature of the course content. Furthermore, it is suggested that unless students can relate the application of what is being taught to their own cultural background, then many of the teaching strategies used by teachers are likely to be less than effective in enhancing learning (Sangster, 2001). Culturally diverse students, when entering a new school system, are not only entering a new educational environment but also entering a new cultural environment which may be aligned with different values and goals (Zhou & Bankston, 2000). As Australian and in particular Queensland Catholic schools are becoming increasingly culturally diverse in their scope and clientele, any examination of the interaction of cultural variables with learning processes assumes critical importance (Falk & Harris, 1983).

2.4.1 A Changing Society

Since the 1950s the cultural makeup of Australian society has altered. Australian governments over the years and their associated agencies have investigated and commented on the changing diversity within Australian society and the associated impact. In a report to The Schools Commission in 1979 The Committee on Multicultural Education noted that Australia should seek to become a society where the preservation of the identity of cultural groups and interaction among them are encouraged and that official policies should attempt to pursue this goal (Committee on Multicultural Education, 1979).

The report also made a number of recommendations pertaining to multicultural education. Amongst these recommendations, the committee noted that if ‘a multicultural attitude in Australian society’ is to be fostered then the following actions must be promoted. First, that there are common values in the diverse society of Australia. Second, a competence in English is essential in Australia as a means of access to a range of options. Third, the cultural diversity of Australia should be

recognized. Fourth, the identity of cultural groups within Australia should be fostered. Finally, that cultural interaction and access to other Australian languages, heritages and values should be actively encouraged (Committee on Multicultural Education, 1979).

Since the formation of these recommendations there have been significant changes, integration and celebration of the cultural diversity that abounds within the Australian society. In the last 50 years almost 6 million people have come to Australia as new settlers and have significantly influenced on all aspects of Australian society. The highest number of settlers to arrive in any one year since World War II was 185, 099 in 1969 – 70. Today, nearly one in four of Australia's 19 million people was born overseas and 20% have at least one parent born overseas. New Zealand and Britain are currently the largest source countries for migrants, but other regions, notably Asia, have become increasingly significant in recent years. Currently people from over 150 countries migrate to Australia each year. Tables 2.3 and 2.4 give further details of the level of migration that has occurred in the last decade, as well as highlighting the changes in country of birth for immigrants over this period (Department of Immigration and Multicultural and Indigenous Affairs, 2003). It is evident from Tables 2.3 and 2.4 that there have been some changes in the country of birth of settlers. Most notably, there has been a significant increase in the percentage of arrivals from Oceania and Africa in the period from 1991 to 2002 as well as a decrease from Asia and North America.

As a result of the ongoing migration programs in Australia since the end of World War II there have been many noticeable social effects. Whilst English is retained as the common language, there has been a significant increase in the number of languages spoken and a proliferation in the number of community language schools, ethnic media, businesses, new foods and diverse religious and cultural activities (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Also changing government migration programs has evolved that reflect business globalization (Galligan & Roberts, 2003). A number of migrants now receive temporary visas in order that they may undertake specific work, conduct business, entertain, play sport or undertake study programs. Interestingly, in the period from 2003 - 2004 nearly 70 000 student visas were issued to overseas students wishing to

study in Australia (Department of Immigration and Multicultural and Indigenous Affairs, 2005). This figure, combined with the number of students from migrant families over the years, highlights the fact that the issue of culturally diversity within Australian classrooms is a significant issue.

Another issue that needed consideration was the increase in the number of school aged immigrants. In 2001, approximately 30% of people arriving from overseas were school aged students (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Other educational issues include the provision of assistance for children whose parents wish them to preserve their cultural heritage, the need to develop educational programs which encourage sensitivity to and respect for the differing cultures within Australian society, and the provision of assistance to school age children born in Australia into non-English speaking families who require assistance in learning English as a second language. Language is a significant educational barrier to children arriving in Australia from overseas countries (Beebe, 1983; Dhindsa & Fraser, 2003; Ryan, 2000).

TABLE 2.3
SETTLER ARRIVALS, BY REGION OF BIRTH, FOR 2001-2002

Region	Number	Percentages
Oceania	19 152	21.5
Europe & former USSR	17 411	19.6
Middle East & North Africa	6 000	6.7
Southeast Asia	14 464	16.3
Northeast Asia	10 716	12.1
Southern Asia	9 190	10.3
Northern America	1 730	1.9
South America, Central America & the Caribbean	900	1.0
Africa (excl. Nth Africa)	9 311	10.6
TOTAL (including 'not stated')	88 900	100

Source: Department of Immigration and Multicultural and Indigenous Affairs (DIMIA, 2003, p. 3)

TABLE 2.4
SETTLER ARRIVALS, BY REGION OF BIRTH, FOR 1991-1992

Region	Number	Percentages
Oceania	10 362	9.6
Europe & former USSR	26 870	25.0
Middle East & North Africa	7 021	6.5
Southeast Asia	22 325	20.8
Northeast Asia	21 473	20.0
Southern Asia	10 594	9.9
Northern America	2 570	2.4
South America, Central America & the Caribbean	3 308	3.1
Africa (excl. N/Africa)	2 823	2.6
TOTAL (including 'not stated')	107 391	100

Source: Department of Immigration and Multicultural and Indigenous Affairs (DIMIA, 2003, p. 4)

In addition to the increase in the number and cultural diversity of the students arriving in Australia and therefore into Australian schools, there is the issue that approximately one fifth are refugees (Department of Immigration and Multicultural and Indigenous Affairs, 2003). The education of these students and their adaptation to a new country following often-traumatic experiences poses special problems (Hamilton & Moore, 2004). While the number of refugees entering Australia depends on Australian Government Policy, unrest in areas such as South East Asia, Yugoslavia, the South Pacific and Africa has led to increasing numbers of refugees entering Australia in recent years (Department of Immigration and Multicultural and Indigenous Affairs, 2003).

2.4.2 Role of Schools

This section will investigate the critical role played by schools in a culturally diverse society and examine four key areas of schools. Section 2.4.2.1 will explore curriculum issue, Section 2.4.2.2 will examine the impact of assessment, Section 2.4.2.3 will look at subjects, whilst Section 2.4.2.4 will detail the role of staff in these schools.

As schools are becoming increasingly multicultural in their scope and clientele, any examination of the interaction of cultural variables with learning processes assumes critical importance (Falk & Harris, 1983). Students' perceptions of their classroom environments are influenced by factors such as student cultural background (den Brok et al., 2002,2003; Dhindsa & Fraser, 2003; Levy et al., 2003; Levy, Wubbels & Breklemans, 1996; Waldrip, 1996), teacher cultural background (den Brok et al., 2002, 2003; Levy et al., 1996), acculturation (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003) and family cultural environment (den Brok et al., 2003; Levy, Wubbels, Brekelmans & Morganfield, 1997). Such factors are influenced by the role of the school.

Garcia (1999), in discussing multicultural education, wrote:

A focus on ethnic studies alone is not sufficient for addressing the educational needs of culturally diverse students because it is too often based on stereotypes. Educators must instead adopt a broader sociocultural approach to language, culture and education. They must understand the child, the family and the community, the school, and the larger society.

(Garcia, 1999, p. 165)

In 1979 the Committee on Multicultural Education recommended that the term 'Multicultural Education' not be used but rather adopt the expression 'Education for a Multicultural Society.' The committee's reason for this was because it felt the notion of 'Multicultural Education' gave the impression that there can be within the education system a separate strand identified in the same way as science education, mathematics education or social science education (Committee for Multicultural Education, 1979). The committee rejected this view but supported the view that 'education for a multicultural society' is not an additional subject but a philosophy which permeates the total work of the school. This view is crucial in understanding the role of schools in a culturally diverse society. This was in line with the evolution of government policy which had progressed from an Assimilation view in the 1960s to an Integration Perspective in the early 1970s, to the current stance of multiculturalism, where raising awareness of cultural diversity and promoting social cohesion, understanding and tolerance are pivotal (Galligan & Roberts, 2003).

Education for a culturally diverse society embodies an educational philosophy that requires an expressive educational policy. Therefore all levels of the formal education system have an obligation to promote and teach programs based on the belief that various cultures represented within the Australian population have something of value to share with others, and something of value to learn from others. In particular this means that the organisational structure of schools and the educational programs and activities offered should encourage the development and maintenance of the student's self esteem and personal identity, while at the same time offering the opportunity for the student to understand and appreciate the cultural patterns other than their own (Committee on Multicultural Education, 1979). Nieto, in defining multicultural education, wrote that "Multicultural education is a process of comprehensive school reform and basic education for all students" (Nieto, 2000, p. 305). She added that "In the final analysis, multicultural education ... is simply good pedagogy" (p. 319).

The Committee on Multicultural Education (1979) identified three major areas which are central to the role of schools in a culturally diverse society. First, Relationships, including home-school relationship and student-teacher relationships. Second, Curriculum, involving multicultural perspectives across the curriculum and language teaching and learning. Third, Essential Support, including staffing patterns and staff training. The key role played by schools in multicultural education was also supported by Gardner (2001).

In terms of the day to day operation of the school there are a number of interrelated elements within the school program which can support the general cultural diversity of society. Schools must provide programs which foster in students an appreciation of the dignity of the contribution that different cultures can make within Australian society. Schools must also provide programs that allow students the opportunity to study the historical, social, sporting, literacy and cultural backgrounds and traditions of particular ethnic groups resident in Australia. Schools must also provide international and intercultural studies that foster an understanding of the countries of origin of the people who comprise the culturally diverse Australian society. Any programs that schools develop to educate students about cultural diversity must be dynamic and continually enriching. Teachers have a central part in such programs (Committee on Multicultural Education, 1979). The central issue on education for a

culturally diverse society is the development of a positive attitude and respect for cultural diversity among all students in all Australian schools (Garcia, 1999; Matthews, 1979). Students from culturally diverse backgrounds need a knowledge of the existing culture to be able to adapt to and function sufficiently within cultural institutions such as schools, in order to gain access to culturally valued knowledge and expertise (Berry, 2000).

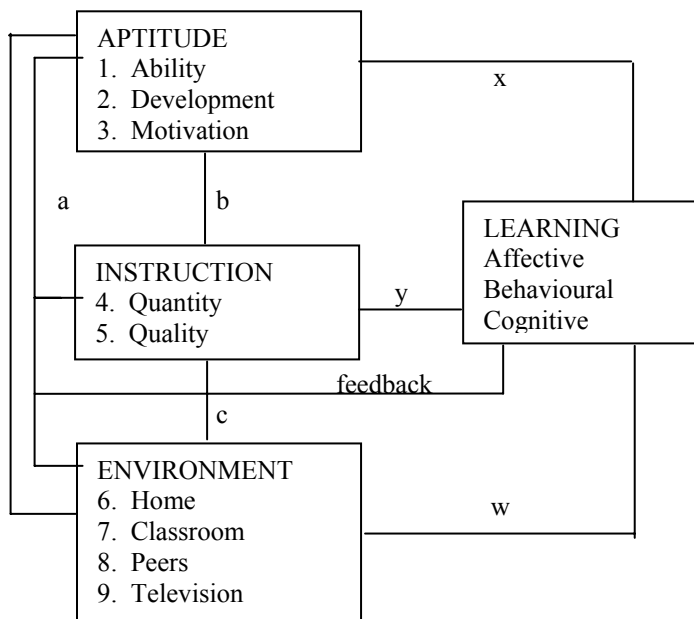
In examining student learning, Walberg (1981) developed a model of 'Educational Productivity'. Figure 2.6 shows Walberg's Educational Productivity Model. Walberg, as shown in Figure 2.6, contended that Aptitude, Instruction, Learning and Environment each affected the educational productivity in the classroom. Walberg also suggested that there are nine factors that require optimisation in order to increase affective, behavioural and cooperative learning (see Table 2.5). Included amongst these factors was ability, motivation, quality of instruction, the home curriculum and leisure time. Waldrip and Giddings (1996) argued that a fourth set of variables, under the broad heading of Culture should be included (see Figure 2.7). It is evident in Figure 2.7 that schools, in educating students, must take into consideration this 'Cultural Aspect' if they are going to maximise student learning. Gender, race and culture, Waldrip and Giddings (1996) contend, also influence learning as well as factors such as aptitude, instruction, and environment.

Although schools face many challenges in a culturally diverse society, there are also many advantages for a school with students from different cultural backgrounds. Garcia (1999) wrote that "Effective instruction of diverse student populations is additive rather than subtractive; that is it recognizes the importance of adding to the rich cultural understandings and skills these students bring with them" (p. 325). Sections 2.4.2.1, 2.4.2.2, 2.4.2.3 and 2.4.2.4 will examine four key areas that influence cultural diversity in schools-curriculum, assessment, subjects and staff.

2.4.2.1 *Curriculum Issues*

If schools are to be effective in educating students in the culturally diverse Australian society, then the curriculum that is offered in schools takes on a paramount role. The

successful development of relevant, integrated and informative curricula is one of the many challenges facing schools today as they struggle with an increasing culturally diverse student population. A multicultural curriculum has to affirm individual and collective identities. It needs to take account of the inter-relatedness of cultures and the rights of the individuals to make informed choices about cultural affiliation. (Gardner, 2001).



Note: Aptitude, Instruction, the Psychosocial Environment and Culture are major direct causes of learning (shown as w, x, and y). They influence one another (shown as a, b, and c) and are in turn influenced by feedback on the amount of learning that takes place.

Figure 2.6
Walberg's Educational Productivity Model

Source: Walberg (1981, p. 81)

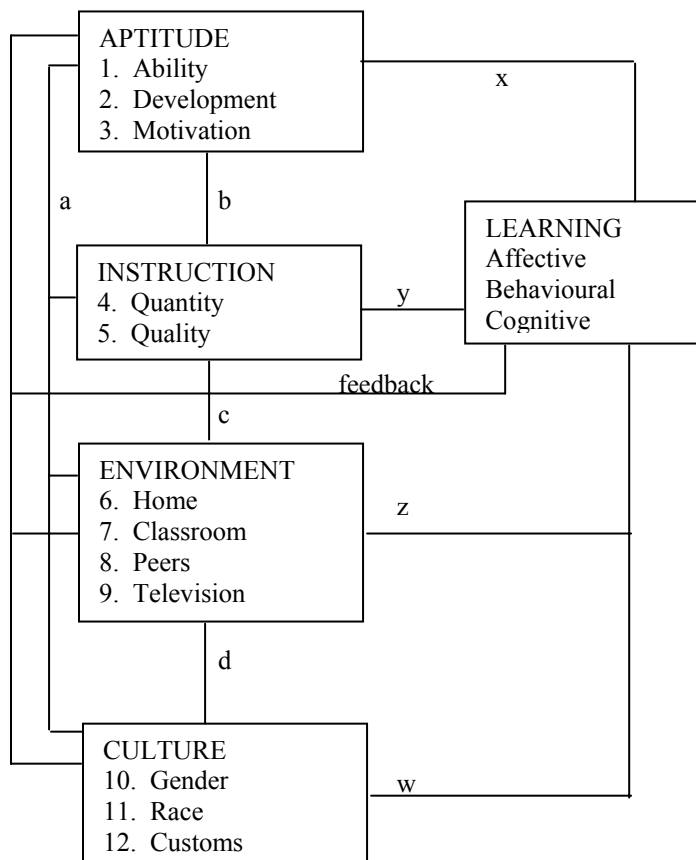
Weinberg (1977) outlined three educational models that can be used for educating students in a culturally diverse society. First, ‘The Human Relations Model’ which makes an assumption that people are basically tolerant of other ethnic groups and education can provide information leading to changes of attitudes. Second, ‘The Inter-Racial Model’ recognises the prejudice that exists at group level against certain ethnic groups. This model would contradict Australian government reports. Third, ‘The Human Rights Model’ highlights group differences as positive attributes of equal worth. This curriculum model is more in line with what the Australian government wishes to promote via its policy on multiculturalism (Hill, 1982).

TABLE 2.5

NINE EDUCATIONAL PRODUCTIVITY FACTORS ACCORDING TO WALBERG (1991)

1.	<i>Ability</i> or preferably prior achievement as measured by the usual achievement tests
2.	<i>Development</i> as indexed by chronological age or stage of maturation
3.	<i>Motivation</i> or self concept as indicated by personality tests or the student’s willingness to persevere intensively on learning tasks
 Instruction	
4.	the <i>amount</i> of time in which students engage in learning
5.	the <i>quality</i> of the instructional experience including method (psychological) and curricular (content) aspects
 Psychological Environments	
6.	the ‘curriculum of the <i>home</i> ’
7.	the <i>morale</i> of the classroom social group
8.	the <i>peer group</i> outside school
9.	minimum leisure-time <i>television</i> viewing

Source: Walberg (1991, p. 94)



Source: Waldrip & Giddings (1996, p. 3)

Note: Aptitude, Instruction, the Psychosocial Environment and Culture are major direct causes of learning (shown as w, x, y, and z). They influence one another (shown as a, b, c, and d) and are in turn influenced by feedback on the amount of learning that takes place.

Figure 2.7
Educational Productivity Model with Cultural Adaption

Saunders (1982) developed a comprehensive curriculum model for multicultural education. Figure 2.8 outlines Saunder’s model. This model identifies barriers that exist to achieving a multicultural society, such as the level of literacy and numeracy, the uniqueness of problems for particular ethnic groups, the inequities and the stigma that can arise from the use of culturally biased instruments and materials, and the attitudes of teachers and peers and the institutional racism of schools which can

inhibit achievement. Again this curriculum model is consistent with approaches previously outlined by the Australian Government. Given that the curriculum is an indicator of the way a society views itself, a multicultural curriculum is applicable to all schools (Gardner, 2001).

2.4.2.2 *Assessment*

One aspect of any curriculum development is the assessment procedures that are to be employed. As outlined in Saunders's (1982) curriculum model (see Figure 2.8), assessment procedures employed in culturally diverse classrooms may have significant impact on students of minority cultural groups. Figure 2.8 shows the impact of planned curriculum strategies when dealing with multicultural education. It also details what is termed 'hidden curriculum problems' such as institutional racism and personal racism. Traditional methods of testing, and particularly the use of 'objective' tests, could be misleading in a culturally diverse setting. The evolution of outcome based assessment in contemporary educational curricula is one way to address such issues.

Hill (1976) stated:

... most schools have adapted to subjective assessment and accepted that in the absence of specially prepared tests for multiracial schools the most valuable form of assessment relies very heavily on the judgement of experienced teachers.

(Hill, 1976, p. 36)

The concept of streaming classes based on 'traditional' assessment performances has resulted in a disproportionate concentration of migrant students in lower streams. The question must be raised whether streaming is justified in a culturally diverse setting (National Seminar for Teacher Educators, 1974).

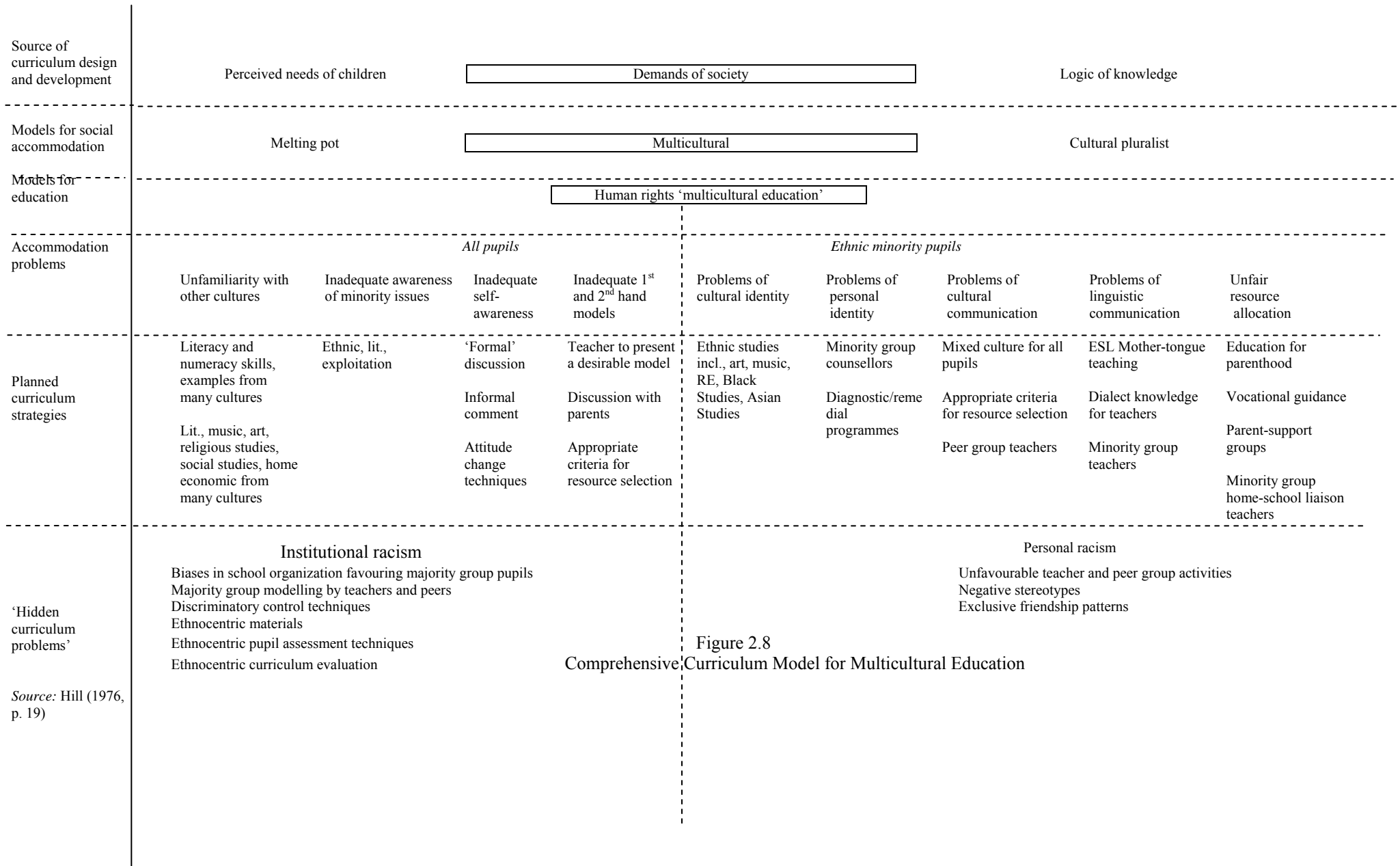


Figure 2.8
Comprehensive Curriculum Model for Multicultural Education

Source: Hill (1976, p. 19)

In more recent times ‘streaming’ students has been less favoured. Alternatively the development of special and specific assessment instruments for ethnic students is another possible option (Ryan, 2000). However, Hill (1976) believed that such options have the potential to create a sense of ‘second class citizenship.’ This view was also held by the Department of Education and Science Education Survey 10: Potential and Progression a Second Culture in 1971. Clearly the development of ‘culture-fair’ tests is difficult and their results may be prone to misinterpretation (Hill, 1976; Nieto, 2000).

2.4.2.3 Subjects

Hill (1976), Saunders (1982), and Weinberg (1977) have identified that the cultural background of students is important when addressing issues of curriculum. This is true for the development of general curriculum approaches and assessment, but is also true when examining specific subjects.

Arora and Duncan (1987) found this was true for mathematics when they wrote that “By using a child’s culture as the context of mathematics we may also enhance their self-esteem, which is vital in academic performance” (p. 117).

Dyson (1987) reinforced the importance of cultural background in mathematics teaching. He believed that the increasing cultural diversity of classrooms has placed a greater focus on the social responsibility of the mathematics teacher, and asserted that the way in which mathematics is taught has a direct effect on the attitudes of all people. If mathematics teachers recognise the contributions of other cultures to mathematics in their lessons, they will play their part in fostering the acceptance of different cultures and contributing to greater equality in education (Dyson, 1987). A number of studies have investigated the relationship between cultural background and subject type (Meade, 1981; Ninnes, 2004; Perso, 2002; Ryan, 1999; Temon, 2005; Webster & Fisher, 2004). Similarly, previous research has shown that classroom environment varies with subject type (Anderson, 1971; Astin, 1965; Hearn & Moos, 1978; Steel, Walberg & House, 1974; Tamir & Caridin, 1993).

Table 2.6 indicates that students with differing cultural backgrounds have differing interests in subjects such as mathematics, science and commerce. Table 2.7 highlights similar information with respect to a variety of other subjects that fall loosely under the heading of ‘humanity’ subjects. (Meade, 1981). From Tables 2.6 and 2.7 it is evident that students from different cultural backgrounds view particular subjects with different levels of interest. From Table 2.6 it is evident that families where both parents are from non-speaking backgrounds value mathematics above any other combination of subjects. Table 2.7 shows that amongst the humanity-type subjects, English is viewed as the most important irrespective of the parent’s country of birth combination. Although Tables 2.6 and 2.7 do not examine Religious Education, the consideration of cultural background is of importance for this subject. Ryan (1999a) wrote:

The religion program required in the Multicultural classroom is one which is paradoxically, both particular and universal. The experience and interests of students in the classroom are a significant aspect of this approach.

(Ryan, 1999a, p. 6)

He added that “...neither a narrow exclusion nor a broad pluralism provides an adequate foundation for the religion program in a multicultural classroom” (p. 6).

The increasing cultural diversity being experienced in contemporary classrooms can be considered as a major issue to be overcome, or it can be seen as the solution to the problems of finding a viable curriculum. Curriculum designers have found that classroom teachers face the challenge of coping with and incorporating cultural diversity in the classroom by creating innovative, cross cultural programs and assessment (Hill, 1976).

TABLE 2.6

PERCENTAGES OF STUDENTS IN GRADE 10 WHO WERE INTERESTED IN MOST OR ALL
THE WORK IN MATHEMATICS, SCIENCE, COMMERCE

Parents' Country of Birth	Mathematics	Science	Commerce
Both Australian	58	72	52
Both non-English-speaking countries	69	78	52
Another or different English-speaking countries	58	76	51
One parent English-speaking other non-English-speaking country	57	69	38

Source: Meade (1981, p. 101)

2.4.2.4 Staff

Teachers play a crucial role in the education of students, especially in culturally diverse classrooms, and their effectiveness relies on their ability to cope with the ever increasing changes in society. The teacher must be able to relate meaningfully to a wide range of people, to recognise and confront personal prejudices, and finally recognise their own needs both as a teacher and an individual and to take effective steps to fulfil them (Garcia, 1999; Hill, 1976). Teachers are the personnel to institute curriculum changes or specific teaching strategies in a culturally diverse society (Garcia, 1999). The effectiveness of such strategies is very much dependent upon the skills of the teachers. The effectiveness of such strategies is very much dependant upon the skills of the teachers. The teaching and learning strategies used by teachers may enhance effective student learning. Alternatively they may conflict with the students' way of thinking, previous learning strategy or home environment. In this situation student performance may be adversely affected (Giddings & Waldrip, 1997).

Teachers should utilize curriculum strategies and techniques that are currently regarded as good practice in motivating students from culturally diverse backgrounds (Saunders, 1982).

TABLE 2.7

PERCENTAGES OF STUDENTS IN GRADE 10 WHO WERE INTERESTED IN MOST OR ALL THE WORK IN THE HUMANITIES SUBJECTS

Parents' Country of Birth	English	Language	History	Geography	Asian Social Studies	Social Studies
Both Australian	70	46	73	75	60	25
Both non-English-speaking countries	76	65	72	76	60	31
Another or different English-speaking countries	73	52	71	76	49	..
One parent English-speaking other non-English-speaking country	80	56	64	75	78	..

Source: Meade (1981, p. 99)

The effectiveness of such strategies is very much dependent upon the skills of the teachers. The teaching and learning strategies used by teachers may enhance effective student learning. Alternatively they may conflict with the students' way of thinking, previous learning strategy or home environment. In this situation student performance may be adversely affected (Giddings & Waldrip, 1997). Teachers should utilize curriculum strategies and techniques that are currently regarded as good practice in

motivating students from culturally diverse backgrounds (Saunders, 1982). Saunders (1982) advocated that teachers should attempt to promote strategies that will assist the students' educational process without severing contact with their cultural roots. Teachers also have a responsibility to prepare students from all cultural groups to live in a culturally diverse society. Teachers could fulfil the role of the school-based manager of learning, selecting a balanced set of strategies and instructional approaches that is appropriate to the profiles of the students in the classroom (Giddings & Waldrip, 1997). Effective teachers of culturally diverse classrooms organize and deliver instruction in a characteristic way: they specify task outcome and communicate high expectations for the students (Garcia, 1999). Effective teachers use pedagogy that is empowering and encourage students to think critically (Nieto, 2000).

For students from culturally diverse backgrounds the issue of language is important. A lack of understanding of the dominant language is a major inhibitor to student performance (Beebe, 1983; Dhindsa & Fraser, 2003; Ryan, 2000). Therefore in classes where students do not come from an English speaking background, the teacher needs to develop a genuine regard for and acceptance of the student's native language. The teacher should value the student's language while at the same time help the student to acquire skills in English (Arora & Duncan, 1987).

There are many factors that influence the work of teachers in a contemporary culturally diverse society. Figure 2.9 is a representation of such influences. In his research in England, Davis (1987) found that teachers believed that influences such as recruitment policies, pastoral care, resources and parents, as described in Figure 2.9, had varying effect: firstly on the work teachers can do in a classroom, and secondly the effectiveness that teachers can have in working with students from a variety of cultural backgrounds. Some of the influences such as assessment, curriculum, teacher training, home-school liaison, school organisation, and family are addressed in this thesis. In order for teachers to be effective in educating students in a culturally diverse society, addressing such influences highlighted in Figure 2.9 is essential.

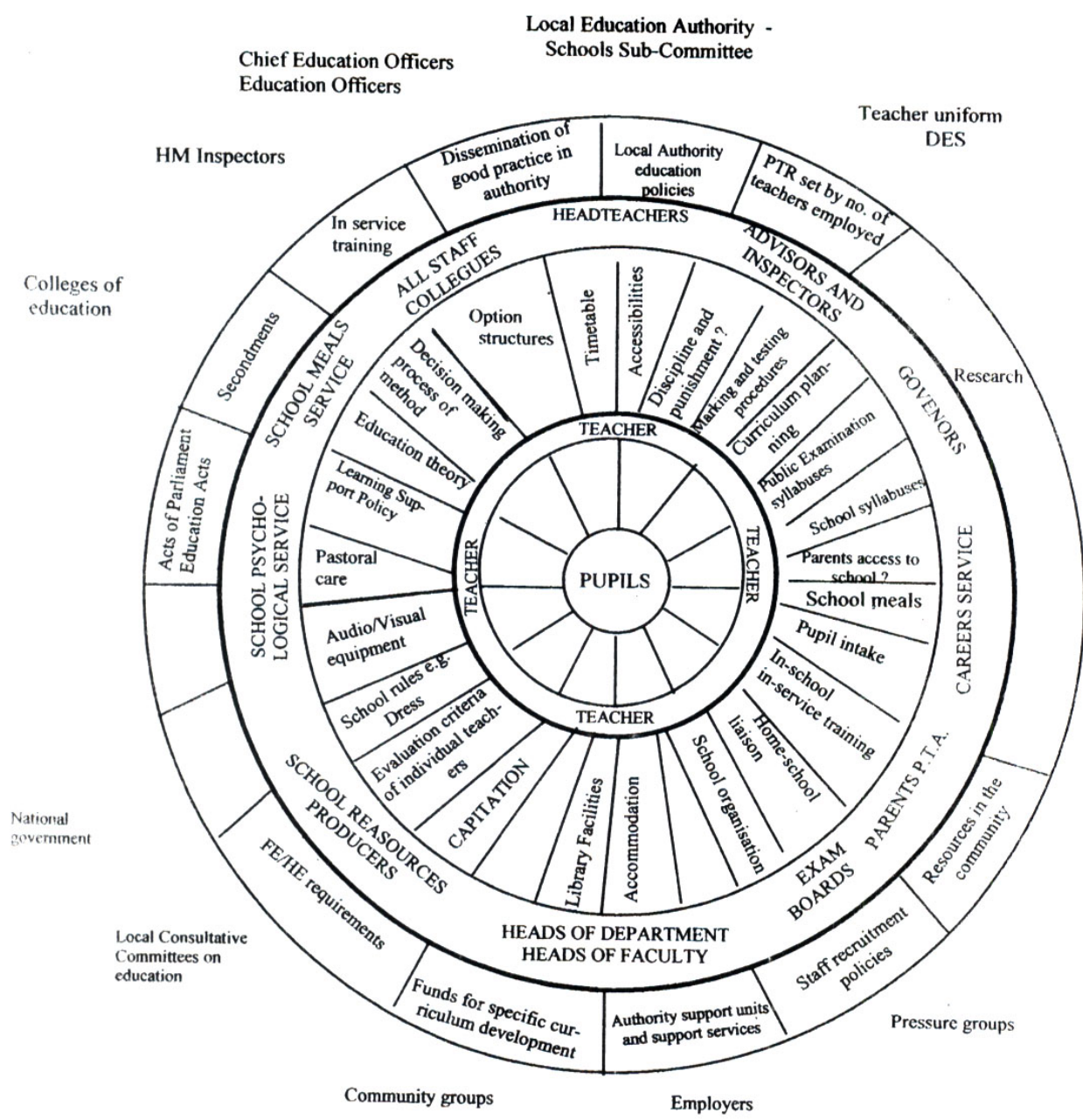


Figure 2.9

Representation of some of the Factors which are Central to or Impinge on the Work of the Classroom Teacher

Source: Davis (1986, p. 11)

2.4.3 Role of Students

This section will investigate the role of students in a multicultural society and detail in Sections 2.4.3.1 and 2.4.3.2 issues pertaining to the perceptions and aspirations of students from different cultural backgrounds. Contemporary Australian Society has, over the last fifty years, undergone a metamorphosis with respect to its cultural diversity. Sections 2.4 and 2.4.1 addressed such changes. There are many pressures facing the contemporary students, including issues pertaining to social structures, employment prospects, tertiary studies options and financial pressures. Students from different cultural backgrounds face not only these pressures, but also issues that are specific to their cultural background. Students from different cultural backgrounds, when entering a new school system, face not only the challenges of a new educational environment but also a new cultural environment (Zhou & Bankston, 2000).

Saunders (1982) believed that three major issues are faced by culturally diverse students. First was the issue of identity. Living and being educated in a society that is different from their own creates a lack of identity. Second, a limited understanding of the language used and an inability to communicate effectively with teachers and peers. Third, was the access to community resources. Conversely the problem could be viewed as a lack of access to community resources. The role of family and community will be discussed in Section 2.4.4.

Identifying the cultural environment of culturally diverse students will assist with choosing the appropriate teaching strategies for students (Marjoribanks, 2004; Waldrip & Fisher, 1996). Waldrip and Fisher (1996) wrote “If we can identify the cultural environment of our secondary students in a given classroom then it follows that we have the opportunity to optimise the teaching strategies to be aligned with these cultural dimensions” (Waldrip & Fisher, 1996, p. 13).

Giddings and Waldrip (1997) argued that students from a variety of ethnic backgrounds often found difficulty in matching the knowledge and teaching strategies, with those learned in their own culture. This uncertainty and contradiction is a major challenge faced by students from different cultural backgrounds. The

challenge for curriculum planners, educationalists and classroom teachers is to attempt to lessen this uncertainty by choosing teaching strategies, and curricula that are 'cross-cultural' (Sangster, 2001).

In examining student achievement, Marjoribanks (1978) believed that the family environment dimension, individual characteristics and the academic achievement are important areas that influence a child's academic achievement. Figure 2.10 summarises Marjoribanks' views and highlights that the Family Environment Dimension is an important correlate of a child's achievement. Whilst the role of family will be discussed later in this chapter, it is important to note that family background, including the family's cultural background, is a major influence on student achievement (Marjoribanks, 1980, 2004; Okebukola, 1986; Thaman, 1993).

In addition, the teaching and learning strategies occurring in high school classrooms throughout multicultural Australia are often perceived as being in conflict with the natural learning styles of the students (Sangster, 2001; Sloneic & Del Vecchio, 1992; Waldrip, 1994). Teachers can use practices that may inadvertently conflict with a student's way of thinking, previous learning strategies, or their home environment, morals and values. Okebukola (1986) and Dhindsa and Fraser (2003) suggested that the cultural background of the learner can have a greater effect on education than does the substantive nature of the course content. Furthermore, unless students can relate what is being taught to their own cultural background, then many of the teaching strategies used by teachers are likely to be less than effective in enhancing learning (Nieto, 2000). Also, for some time now, it has been argued that one of the main sources of students' learning difficulties is the lack of optimisation between teaching strategies utilised by the teacher and the natural learning styles of the learner (Hofstein, Giddings, & Waldrip, 1994; Kempa & Martin-Diaz, 1990a & 1990b).

The cultural background of students has a significant influence on the classroom setting and what and how the teacher operates within the classroom. The existence of students from a range of cultural traditions can be viewed as a problem by teachers who are accustomed to a monocultural classroom. However, Ryan (1999) believed the opposite was true. He believed that the participation of students from a range of backgrounds in a classroom was the cure rather than the disease. The insights,

backgrounds and experiences of the students assembled in the classroom are the starting points for the questions, issues and themes which the teacher can pursue. Conway (1998) also identified the necessity to appeal to the experience of students in the classroom. Her insight is supported by Gaita (1998). He wrote that “We do not discover the full humanity of a racially designated people in books by social scientists....” (p. 11).

2.4.3.1 *Perceptions of School*

Several writers have drawn attention to the importance of utilising information on student needs in educational planning. Blishen, (1969) wrote:

In all the millions of words written annually about education, one viewpoint is invariably absent – that of the child, the client of the school. It is difficult to think of another sphere of social activity in which the opinions of the customer are so persistently overlooked.

(Blishen, 1969, p. 178)

Poole and Simkin (1978) supported this view and wrote:

If educational researchers, teachers and administrators devised programs based on actual or expressed needs of secondary students, in combination with their own philosophies, student alienation might decrease.

(Poole & Simkin, 1978, p. 86)

In more recent times, students’ perceptions of school have been sought and used as part of future planning. Meade (1981) examined the perceptions of students from culturally diverse backgrounds in Sydney high schools, and found that students from non-English speaking backgrounds made positive attitude statements about teachers and fewer negative statements than other student groups examined.

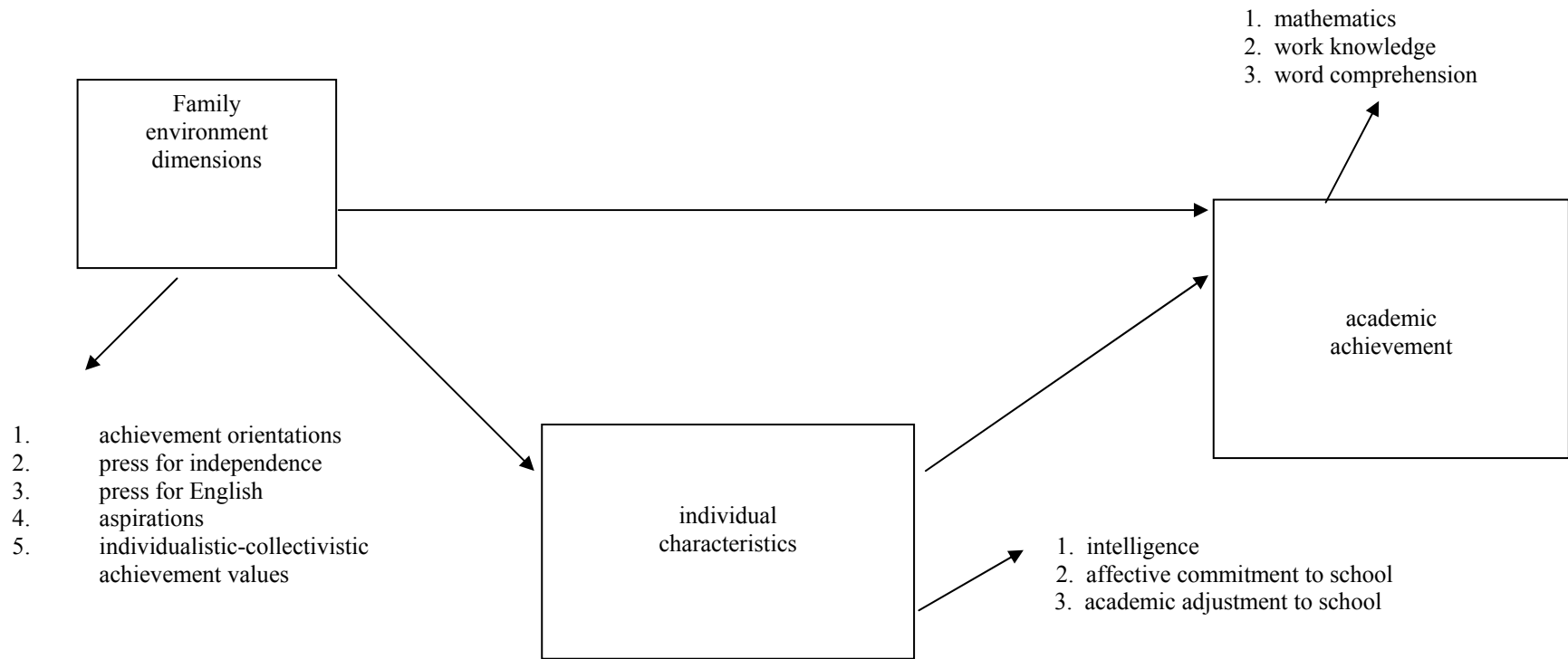


Figure 2.10
Correlates of Children's Academic Achievement

Source: Marjoribanks (1979, p. 47)

Other studies that investigated the environments of Australian Catholic schools include Dorman, (1994), Leavey (1972, 1993), Fahy (1980, 1982), Flynn, (1975, 1985, 1993, 1998), McTaggart (1980), and Mok and Flynn (2002). International studies investigating Catholic school environments include Egan (1988), and Randhawa, (1991).

2.4.3.2 *Aspirations of School*

There have been many studies conducted over these years, both in Australia and overseas that have investigated Students' Aspirations. Hiro (1971), Thompson (1974), and Townsend (1971) were some researchers. In Australia Cox, (1975), Falk & Harris (1983), Marjoribanks, (1982), Meade (1981), and Smolicz and Wiseman (1971) have all conducted research into the aspirations of students, particularly students from culturally diverse backgrounds.

Cox (1975), Marjoribanks (1980a), and Taff and Cahill (1978) have found that students from non-English speaking backgrounds have high educational aspirations, and concluded that these high educational aspirations are backed up by strong family support and high expectations. Other research has investigated various influences, such as cultural background, on students' educational aspirations (Chen & Stevenson, 1995; Falk & Harris, 1983; Guerra & Braungart-Rieken, 1999; Mau, Hitcock & Calvert, 1998; Otto, 2000; Stevenson, Chen & Lee, 1993; Taylor, Harris & Taylor, 2004). Students from different cultural backgrounds had limited knowledge about career opportunities, due in part to language difficulties and a lack of contact with businesses (Nieto, 2000).

Figure 2.11 examines a variety of educational related issues across a number of social and cultural groupings. The findings suggest that families from Anglo groups approximate more closely the ideal-typical definition of an academically oriented family than do non-Anglo group families. The exception is the aspirations of parents from Greek and Southern Italian families, who expressed the highest aspirations for their children (Marjoribanks, 1979). Previous research has asserted that Parents' aspirations influence children's cognitive performance (Alexander & Eckland, 1974;

Marginson, 2004; Marjoribanks, 1979; Sowell & Hauser, 1985; Taylor, Harris & Taylor, 2004; Wilson & Portes, 1975). The loadstone for migrant families is the educational success of their student children (Inglis, 2003).

2.4.4 Role of Family And Community

This section examines the critical role of the family in a multicultural society and outlines the influence of language, home-school relationships and family environment in Sections 2.4.4.1, 2.4.4.2 and 2.4.4.3 respectively.

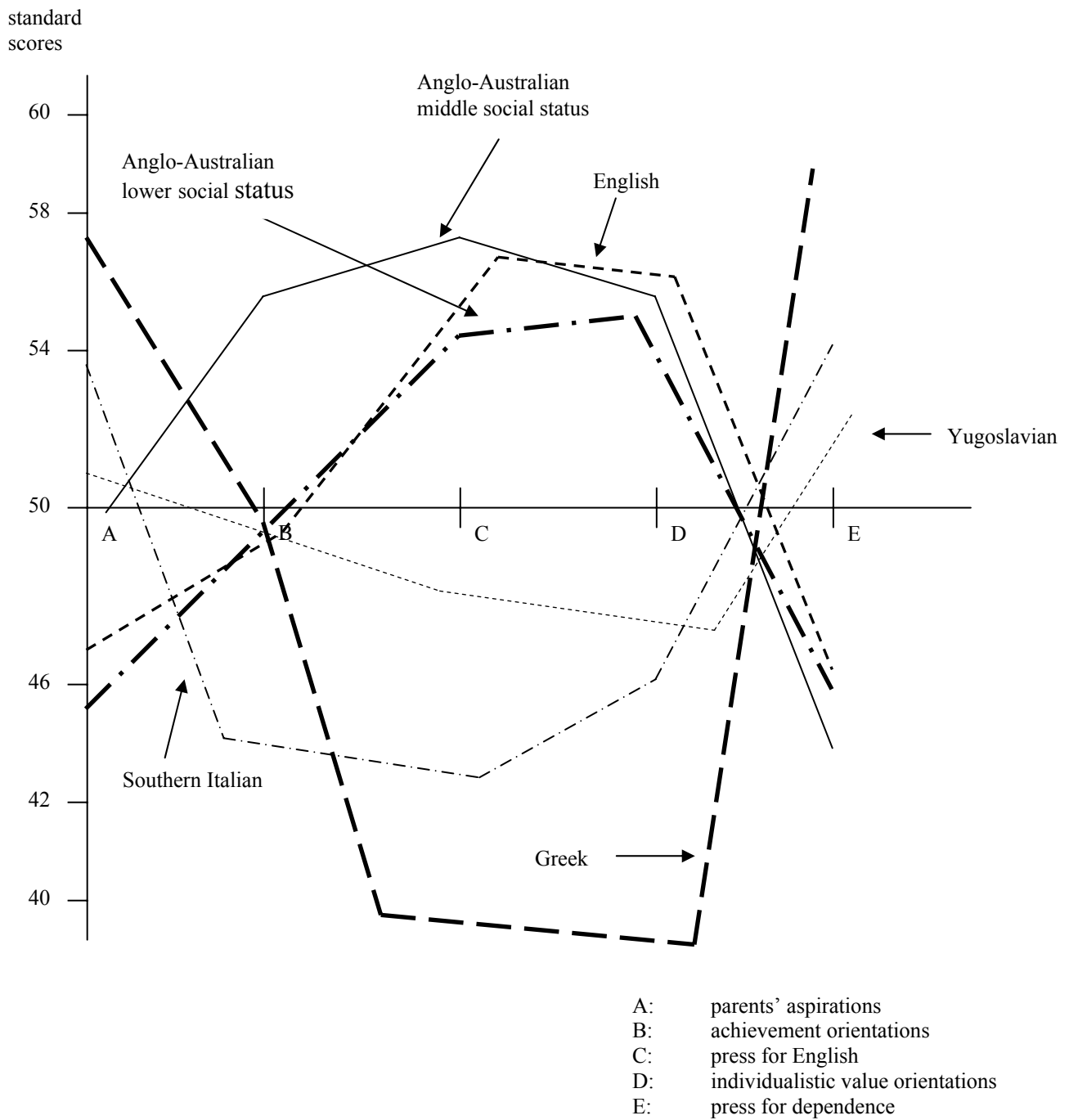
Although Australian society is continuing to increase in cultural diversity there is also a trend where some ethnic groups are being isolated within the general community. ‘Ethnic population pockets’ are developing across many communities. As a consequence there is the possibility that members of cultural communities may become isolated from society and therefore hamper the successful integration of different cultural groups into society (Marjoribanks, 1979).

The focus of the present study is concerned with classroom learning environments. However, it is necessary to examine briefly family environments because, in many cultures, the family, including the extended family, has an important influence on students’ perception of their classroom learning environment.

Three groups of problems can be identified from research into multicultural families (Saunders, 1982). First, is the problem of identity (Begley, Verma, Mallick & Young, 1979; Brah, 1978; Louder, 1978). Second is communication (Edwards, 1979; Little, 1975; Townsend, 1976), and third is accessing community resources. Saunders (1982) believed that the identity problems that members of the ethnic minorities can face may be helped by effective counselling. Marjoribanks (1979) believed that attempts should be made to weaken the association between family social circumstances and the cultural capital that can be transmitted to children by families.

Figure 2.11

Profiles of Family Environment Dimensions for each Ethclass



Source: Marjoribanks (1979, p. 67)

This belief reinforces the Galbally Report (1978) which outlined that every person should be able to maintain their culture without prejudice or disadvantage, and should be encouraged to understand and embrace other cultures (Marjoribanks, 1979). Marjoribanks also believed that parents from ethnic minority groups must increase their own 'teaching' skills and 'learn about the educative processes of the school system, if they are to be more effective in providing a 'committed' learning environment at home for their children. The lack of involvement of parents from different cultures may be attributed to issues such as language, finance, lack of knowledge of the educational system, and their own negative experiences of school (Nieto, 2000).

The inclusion of the role of family and community in this chapter is essential because of the crucial influence they have on students and their perceptions of their classroom learning environments. The relationship between school and family is critical (Garcia, 1999).

2.4.4.1 *Language*

Difficulties in communication and poor language skills are the major problems facing students and families from culturally diverse backgrounds (den Brok et al., 2003; Ryan, 2000; Saunders, 1982). Meade (1981) found that a high proportion of parents from ethnic minority groups could not communicate in English. This created problems for families as they attempted to assimilate into the Australian society, thus limiting opportunities in education careers for parents and students.

Within the non-English speaking families, the language of family communication networks is an important intervening variable which influences the ability of migrants to participate in the dominant culture (Meade, 1981). There is a high retention rate of native language in non-English speaking households with parents communicating with others in their native tongue, siblings communicating with each other in English and siblings and parents tending to communicate in a mixture of the two languages (Meade, 1981). Siblings were forced to act as translators on many occasions for

parents, particularly with official communications from school (Falk & Harris, 1983; Meade 1981; Nieto, 2000).

The lack of or sporadic use of English in families of culturally diverse backgrounds can compound the effects of isolation and lack of knowledge or understanding of opportunities available. Language is central to education and is the medium through which values, status and identity are derived. The development of language in multicultural classrooms is critical (Gardner, 2001).

2.4.4.2 *Home-School Relationship*

The Committee on Multicultural Education (1979) identified home-school relationships as a major influence on the role of schools in a culturally diverse society. It is important to foster positive home-school relationships in order to allow parents the opportunity to experience what is happening in the school, to support the work and action of the teachers, and so provide better educational support for their children. Effective communication between home and school, and the involvement of parents are key issues in addressing cultural diversity in schools (Hamilton & Moore, 20004). There is evidence that in a cultural minority family, the family is an important influence on a child's achievement (Chen & Stevenson, 1995; Guerra & Braugnart-Rieken, 1999; Otto, 2000; Stevenson, Chen & Lee, 1993). Smith (1972) wrote that "Schools have little influence on achievement which is independent of the child's background and general social content" (p. 15). A view supported by Midwinter (1975) who wrote that "No matter how much you do inside the school, you can make vertically no impact without the informed support of the home" (p. 16).

For many parents from culturally diverse backgrounds their recollection of their own schooling is one of harsh discipline. It was where student-teacher and home-school relationships were remote and formalized (Committee on Multicultural Education, 1979). It is therefore imperative that ways of establishing and maintaining home-school relationships be examined. The difficulty is that although parents from different cultural backgrounds view education as important for their children, they

resist getting involved in school because they do not see it as their role (Falk & Harris, 1983).

A study conducted by Falk and Harris (1983) which investigated families from various cultural backgrounds in both Sydney and Brisbane, found that parents from culturally diverse backgrounds attached greater importance to their child's schooling than parents from native Australia. This finding was consistent with an earlier study by Meade (1981) which found that many non-English speaking migrant parents have clear goals for their children and schooling is seen as the key. Arora & Duncan (1987) made similar findings in their research in Britain. Several studies (Chen & Stevenson, 1995; Guerra and Braugart-Rieken, 1999; Stevenson, Chen and Lee, 1993; Taylor, Harris and Taylor, 2004) have made similar assertions regarding the influence of family on educational aspirations. Yet for parents from culturally diverse backgrounds, making contact with the school, which is so central to many of their hopes and plans for their children, is very difficult and at times intimidating (Nieto, 2000).

Home-school relationships are seen as crucial in the modern education system, particularly in Catholic schools (Flynn, 1993). Good home-school links provide parents with the opportunity to experience what is happening in the school, to support the action of the school, provide a source of volunteers and support their child's educational outcomes. When examining the home-school links in a culturally diverse society complications arise with respect to language and perhaps cultural differences in educational expectations (Committee on Multicultural Education, 1979).

Improving home-school relationships is a key issue for modern educational systems and may include strategies such as the formation of councils, committees, the hosting of information nights, the provision of translated newsletters, and bilingual school staff. Appendix 9 illustrates the range of interactions that take place between the home environment and the school/classroom environment. However, no formal relationships will succeed between the school and its culturally diverse community until trust has been established and interaction occurs (Committee on Multicultural Education, 1979). Family involvement is a complex issue and unless teachers and schools understand the cultural meanings underlying different families', traditional

involvement strategies may further estrange families who already feel disconnected from the school (Nieto, 2000).

2.4.4.3 *Family Environments*

Links between home and school are seen as crucial in the modern educational setting. Families from culturally diverse backgrounds have traditionally resisted involvement in the operation of the school, preferring to leave the education of their children to the school and its teachers. Nevertheless the family, and in particular the culturally diverse family, plays a crucial role in the child's education (den Brok et al., 2003; Levy, Wubbels, Brekelmans & Morganfield, 1997). If educational policies are designed to reduce group differences in children's achievements, then it is important to incorporate such policies in conjunction with family learning environments. (Coleman, 1975). Midwinter (1975) commented that "No matter how much you do inside the school, you can make virtually no impact at all without the informed support of the home" (p. 16). He later claimed that the family, peer group, and neighbourhood, were the true and influential educators and that they cannot be ignored (Midwinter, 1975).

In a study conducted by Falk and Harris (1983) it was found that in both Sydney and Queensland studies, non-English speaking families played a significant role in relation to their children's future. Home learning environmental factors bore significant relationship to the achievements of students from culturally diverse backgrounds (Marjoribanks, 2002; Timms, 1996). Giddings & Waldrip (1997) later cautioned that there needed to be consistency with how students from culturally diverse backgrounds learnt at school and how they learnt at home. If there were differences in the learning techniques between home and school, then there was a possibility of confusion with the student which in turn may affect achievement (Giddings & Waldrip, 1997; Sangster, 2001).

Parents from culturally diverse backgrounds play a key role in their child's education. Although they may accept low school performance, they consistently encourage their children to complete secondary school (Falk & Harris, 1983). This observation may

be explained by the fact that such parents are very determined to see their children succeed in Australia. They want their child to achieve a good job, 'certainly better than their own.' Children from such families can rely on constant parental reinforcement (Taylor, Harris, Taylor, 2004). Encouraging communication within the family is another way parents support the academic success of their children (Nieto, 2000).

2.4.5 Conclusion

Cultural diversity is an integral part of modern society. Education plays a critical role in this culturally diverse society. Education influences and reflects the values of society, and the kind of society we want (Gardner, 2001). Contemporary schools have an ever increasing cultural diversity and it is inconceivable that any student currently in school could live their life without meeting, working with, or in some other way affecting, or being affected by, people from a wide range of culturally diverse backgrounds (Gillborn & Mirza, 2000).

This section has examined the cultural diversity within Australia, both past and present, and detailed the critical role and importance of multicultural education in Australian schools. In this chapter, three factors have been identified, in this chapter, that influence the successful integration of multicultural education into Australian schools. First, the role of schools. Through a suitable curriculum, appropriate assessment practices, suitably trained staff and appropriate subjects, schools are central to multicultural education. Second, the role of the students. The perceptions and aspirations of students are influenced by culture. Successful multicultural education must address these issues. Third, the role of family and community. Issues such as language, home-school relationships and family environment significantly influence multicultural education in Australian schools.

Cultural diversity is central to modern Australian society and contemporary Australian schools. In order to be effective in this culturally diverse society, schools must customize learning environments, utilize native language and cultures, use a variety of culturally sensitive instructional strategies, pedagogical and assessment

practices, employ staff development programs and promote home and parent involvement (Garcia, 1999). The present study investigated the perceptions of students in culturally diverse classroom environments in Queensland Catholic secondary schools.

2.5 CHAPTER SUMMARY

The purpose of this chapter was to examine, from existing literature, the major areas of this thesis, namely, Catholic schools, learning environments and cultural diversity.

This chapter examined the Australian Catholic school setting in order to conceptualize this study and provide a basis for discussion of the research findings. Catholic schools have evolved substantially from their humble beginnings in the early 1800s. As societal changes have occurred, so too have corresponding changes occurred within Catholic schools. Such changes include the loss of authority of the Church as an institution, the increased and changing role and responsibility assumed by the laity, diversification of the curriculum, changing government controls and expectations, increased retention rates and the corresponding increase in cultural diversity, and the critical role Catholic schools assume in providing an experience of Church for students.

From the literature, important dimensions of Catholic schools were identified. It is important to note that relationships and personal growth characteristics are significant aspects of contemporary Catholic schools, and should be incorporated into the development of any instruments designed to investigate multicultural classroom environments in Catholic schools.

An investigation of historical and contemporary learning environment research was conducted in this chapter. With its beginnings in the 1920s and using low inference, observational techniques, learning environment research has evolved to use high inference, perceptual techniques. The use of students' perceptions of their classroom environment has remained a major focus of learning environment research. With the

use of students' perceptions has come the development of associations between learning environments and students' cognitive and affective outcomes (Fraser, 1981). Developments in learning environment research have spawned a plethora of research instruments used to investigate students' perceptions of their learning environments. The present study has used such instruments as a basis for the construction of a context-specific instrument to be used to investigate multicultural classroom environments in Queensland Catholic schools.

In examining an array of previous research associating students' perceptions and their multicultural classroom environments, the context of the present study has been established. Examination of the work of Waldrup and Fisher (1996), and Waldrup and Giddings (1993, 1995, 1997) on cultural diversity and learning environments, as well as previous research examining the effects of variables such as school type, subjects, year level, and cultural background established the context for the present study.

The influence and importance of cultural diversity was the final aspect examined in this chapter. Cultural diversity is an integral part of modern society. Schools influence and reflect the values of society and the kind of society we want (Gardner, 2001). Contemporary Catholic schools are becoming more culturally diverse (Queensland Catholic Education Commission, 2004). An examination of the literature revealed three factors that influence the successful integration of multicultural education into Australian Catholic schools. First, the role of the school. Second, the role of the students. Third, the role of the family and community. Issues such as language, home-school relationship and family environment influence multicultural education in Queensland Catholic schools. Contemporary Catholic schools must customize their multicultural classroom environments, utilize native language and cultures, use culturally sensitive instructional strategies, pedagogical and assessment practices and promote home and parent involvement (Garcia, 1999). As such, examination of these issues must form the basis of any development of an instrument that is designed to investigate multicultural classroom environments in Catholic schools.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the important methodological issues of the present study into multicultural classroom environments in Queensland Catholic secondary schools. This study has accepted the principle proposed by Howe and Eisenhart (1990) which indicated that research questions should drive data collection techniques and analysis and not the other way around. For the present study a total of eight research questions have been posed for investigation, of which three have been further divided into a number of sub-questions (Section 1.2.2). The research questions focus on different aspects of the classroom learning environments in Catholic schools. In particular, they focus on the multicultural classroom environments within Catholic schools and examine differences in students' perceptions with respect to country of birth, gender, school type, year level and subject type. The range of variables being examined by these research questions are designed to allow investigation of various aspects of multicultural classroom environments in Catholic schools. Details of the specific research questions may be found in section 1.2.2. In accepting this action, the present study has established three methodological principles that would allow the research questions posed in Section 1.2.2 to be answered. These principles are as follows: (1) focus on students' perceptions of their classroom environment, (2) develop an instrument to assess these multicultural classroom environments and (3) use an appropriate unit of analysis.

The purposes of this chapter are to discuss some of the methodological issues of the present study, to describe and justify the methods for the study and to comment on the validity of the research. Accordingly, this chapter is divided into three major areas. First, Section 3.2 focuses on important methodological issues, including the unit of

analysis chosen and the philosophical underpinnings of learning environment research. Second, Section 3.3 discusses the research design of the present study and considers issues such as overall design, data collection methods, variables, unit of analysis, quantitative data analysis and the data collection sites that were employed. Finally, Section 3.4 makes comments on the validity of this research and considers issues that threaten the validity of this study. Section 3.5 includes some concluding remarks pertaining to the methodology of the present study.

3.2 METHODOLOGICAL ISSUES

This section examines the methodological issues of classroom learning environment research. Section 3.2.1 briefly examines the historical background of learning environment research. While Section 3.2.2 examines the differences between alpha press and beta press, Section 3.2.3 investigates the differences between low inference and high inference measures in learning environment research. Section 3.2.4 examines the importance of the unit of analysis used in the present study. Section 3.2.5 examines the trends in contemporary learning environment research. Finally Section 3.2.6 summarises the methodological principles adopted for this study.

3.2.1 Background to Learning Environment Research

Various literature reviews (eg. Anderson, 1982; Chavez, 1984; Fraser, 1991, 1994, 1998c) suggest that there are three general approaches to the assessment of learning environments. The first approach is to use trained observers to code classroom events and the behaviour of teachers and students. The second approach is the use of student and/or teacher perceptions which are usually obtained through administering questionnaires. A third approach involves the use of ethnographic data collection methods. Whereas the first two approaches have relied heavily on quantitative data collection methods and statistical analyses, the use of ethnographic methodologies has usually involved qualitative data analysis. In order to evaluate what approach was appropriate for the present study, it was necessary to review the history of learning environment research.

The comprehensive literature reviews which synthesise much of the learning environment work have grown out of the work of Moos and Walberg in the 1960s. (See Sections 2.3.1 and 2.3.2). However, research into classroom learning environments began well before the work of Moos and Walberg. Learning environment research has been documented as far back as the work of Thomas (1929). She used largely descriptive accounts of observations of children (i.e. case histories and diary notes). However, these descriptive accounts were inappropriate for scientific analysis and were subject to experimental errors and experimental design flaws. Other early pioneers in this area included Lewin (1936), Murray (1938), Lippitt (1940), Whittall (1941), Bovard (1951), Stern, Stein and Bloom (1956), Pace and Stern (1958), and Medley and Mitzel (1958). A more comprehensive overview of the work of those mentioned above and others is found in Sections 2.3.1 and 2.3.2.

3.2.2 Alpha Press versus Beta Press

The concepts of alpha press and beta press are important methodological terms in learning environment research (Fraser, 1986). A significant distinction is that alpha press is assessed by a detached observer, whilst beta press is assessed by the milieu inhabitants. In the classroom environment, alpha press usually requires the observer to code specific events according to some scheme, and because it involves direct observations by an outside observer, it is considered highly objective. Beta press, in contrast, examines the environments perceived and experienced by the individual and, in a classroom setting, is dependent upon the subjective assessment of teachers and students. The use of beta press was popular with behavioural researchers of the 1960s and formed the basis of behavioural analysis techniques such as *Flander's Interaction Analysis System* and the *Observation Schedule and Record (OSCAR)*. (See Section 2.3.1). Murray (1938) believed that beta press exerted the greater influence on behaviour because it is what is felt, interpreted and responded to by the person (Hjelle & Ziegler, 1981). Section 2.3.1 further examined this issue. The present study will employ beta press methodology. This is because of the extensive historical support for this methodology in giving a more subjective view of the classroom learning environment.

3.2.3 Low Inference versus High Inference

Another important methodological consideration in learning environment research is the distinction between low inference and high inference measures for assessing learning environment. This distinction has been recognised in recent learning environment literature (Fraser, 1994). Rosenshine (1970) defined low inference measurement as tapping specific phenomena (e.g. the number of student questions). The low inference measurement of classroom environment is a largely descriptive process that classifies specific, denotable, relatively objective classroom behaviour and is usually recorded as frequency counts. It is also perceived to have flaws in analysis and experimental design, which in turn raises concerns with respect to reliability and validity. Despite inherent design flaws concerning reliability and validity, low inference measurements dominated learning environment research until the 1950s (Rosenshine & Furst, 1971).

In contrast, high inference measures require the respondents to make an inference based on a series of classroom events using specific constructions (eg. classroom competition, degree of teacher friendliness). Studies which focus on the meaning of classroom events have tended to utilise high inference measures. The development of reliable and valid high inference measures such as Classroom Environment Scale (CES), My Class Inventory (MCI) and Learning Environment Inventory (LEI) demonstrated that the predictability of students' cognitive, affective and behavioural outcomes are related to students' perceptions of psychosocial characteristics in classrooms (Haertel, Walberg & Haertel, 1981; McRobbie & Fraser, 1993). Instruments such as the Learning Environment Inventory (Walberg & Anderson, 1968a) and the Classroom Environment Scale (Moos, 1968) are landmark examples of high inference instruments. The importance and use of these high inference measures was reaffirmed by Fraser (1981):

The strongest research tradition during the last decade of classroom environment research has involved investigation of the predictability of student's cognitive and affective learning outcomes from their perceptions of classroom environment. (Fraser, 1981, p. 46)

Due to the strong contemporary evidence for the use of high inference measures the present study utilised this approach in the study of multicultural classroom environments in Queensland Catholic secondary schools.

3.2.4 Unit of Analysis

Another important methodological issue in learning environment research is the distinction between private beta press and consensual beta press. Stern, Stein and Bloom (1956) expanded on the distinction of alpha press and beta press asserted by Murray (1938) to develop the idiosyncratic view that each person has of the environment (private beta press), and the shared view that members of a group hold about the environment (consensual beta press).

The importance of the unit of analysis issue to learning environment research has been acknowledged over the past 30 years (Burstein, 1978; Larkin & Keeves, 1984; Raudenbush & Bryk, 1986). What is imperative is that the appropriate level of analysis is chosen that best suits the hypothesis being tested. If the classroom is the unit in the hypothesis then consensual beta press should be adopted. Alternatively, if the individual is the unit in the hypothesis then private beta press should be employed. It is also important that the units of statistical analysis be consistent with the primary sampling unit. If this is not adhered to, then the requirement of independence of sampling units will be violated (Fraser, 1991). The question of invalidity is raised when statistical tests do not match the primary sampling unit. The results obtained from a mismatch of sampling unit and statistical unit must then be questioned because of the unjustifiably small estimate of the sampling error (Ross, 1978).

The unit of analysis has received considerable attention in previous learning environment research. Sirotnik (1980) considered it to be an essential issue when designing and conducting research. He identified three types of analysis that have been used in learning environment research. The first, *Total Analysis*, uses the individual as the unit of analysis and ignores grouping factors. The second, *Within Analysis*, uses the individual scores but removes the group effect before analysis. The

third, *Between Analysis*, uses the class mean as the unit of analysis for studies of classroom environment.

The discussion outlined above indicates that it is crucial that the unit of analysis be carefully considered. It suggests that if the primary sampling unit is the class, then it would be appropriate to measure the consensual beta press for each class with the class mean as the unit of analysis. Alternatively, if the individual is the primary sampling unit then the individual mean should be the unit of analysis. Since the individual is the focus in the present study, the individual mean will be the unit of analysis. Details of level of analysis are discussed in Section 2.3.3.

3.2.5 Current Methodological Trends in Learning Environment Research

The birth of the modern era of learning environment research was some 35 years ago with a significant number of research studies focused on the conceptualisation, assessment and study of students' perceptions of the psychological and social characteristics of the classroom. Over the last 35 years different research trends have evolved.

In the 1960s, much of the research involved a trained observer coding student and teacher behaviours at certain time intervals, using a system such as the Flanders Interaction Analysis System (Flanders, 1970). This approach to learning environment research was in keeping with the key recommendation of Dunkin and Biddle (1974) that instruments for research on teaching processes, where possible, should deal with the objective characteristics of the classroom and so was consistent with the behaviourism of the 1960s. Whilst this approach of low inference research was popular during the 1960s it has been considered less appropriate in the past three decades.

Another now more popular approach to learning environment research requires the milieu inhabitants to make judgements based on their involvement in the particular classroom learning environment. Since the late 1960s, the dominant form of learning

environment research has been this approach of high inference measures of beta press research methodology.

A very important aspect of much of the modern work in learning environment research is that the students' perceptions are being employed as indicators of the learning environment (Haertel, Walberg & Haertel, 1981; McRobbie & Fraser, 1993). That is, the environment is defined in terms of the perceptions of students and teachers. Walberg (1976) advocated the use of student perceptions to assess environment:

Students seem to be quite able to perceive and weigh stimuli and to render predictively valid judgements of the cohesiveness, democracy, goal direction, friction and other psychological characteristics of the social environment of their classes. These molar judgments may mediate the multiplicity of molecular events of instruction and other classroom activities and properties.

(Walberg, 1976, p. 160)

Walberg's Perceptual Model (1976) of the learning process (see Figure 2.4 in Section 2.3.2) shows how perceptions are thought to influence student learning. This model suggests that student learning involves student perceptions as mediators in the learning process.

Some of the leading proponents of contemporary learning environment research such as Fraser and Walberg (1981), Walberg (1991) and Fraser (1994) have suggested that there are several advantages for using measures that define the classroom learning environment in terms of the inhabitants' perceptions. First, students are in a good position to make judgments about their classrooms. They are immersed in the environment for extended periods of time, thus allowing them to form opinions based on long term experiences in the classroom learning environment. Unlike the short term external observers of low inference research, students in the classroom (high inference) have more data to bring to the data collection stage. Moreover, this data has been processed by the inhabitants, resulting in the formation of judgements.

Second, perceptual measures are more economical time wise. The use of a questionnaire administered to an entire class at the same time is an efficient use of the researcher's time. The students, as milieu inhabitants, are able to give meaningful data in large volumes in a short time period. By contrast, the employment of an external observer will give only a single snapshot of the actual time the observer is in the classroom environment.

A third advantage of using student perceptions over observations, codings and perceptions of external observers is that students act on the basis of their perceptions. The assessment of these perceptions as determinants of behaviour is preferable to the reporting of an external observer's assessment of the classroom environment. They involve the pooled judgements of all students in a class and not just that of a single observer.

Fourth, perceptual measures of the classroom learning environment typically have been found to account for considerably more variations in student learning outcomes than other directly observed variables. Walberg (1991a) concluded that low inference alpha press studies could be a narrow approach to the understanding of classroom learning environment. There was however, strong empirical support for using perceptual measures in the *IEA Classroom Environment Study* (Anderson, Ryan and Shapiro, 1989). The perceptions of students are more predictive of their achievement than are the perceptions of external observers (Anderson, 1988).

The advantages outlined above regarding the use of students' perceptions as a means of assessing the classroom learning environment apply to the present study. In examining multicultural classroom environments in Queensland Catholic secondary schools, it was appropriate that the perceptions of the students in these learning environment are sought so that evaluation and assessment may be made.

Furthermore, students' perceptions have been useful in helping educators to understand classroom processes (Gage, 1972; Walberg, 1976) and have been found to be an effective means of improving classroom environments (Fraser, 1985). Researchers such as Waxman and Duschl (1987) and Fraser (1985) have suggested that there is considerable potential for student feedback using classroom environment

instruments in assessing the classroom learning environment. By employing students' perceptual measures, it is contended that this study is consistent with past research techniques employed in the area of classroom learning environment research.

3.2.6 Summary of Methodological Principles of the Study

From the preceding discussions in this chapter a number of issues have been examined that suggest three methodological principles that underpin the present study.

Students' perceptions have been useful in giving researchers insights into classroom learning environment (Fraser, 1985; Gage, 1972; Walberg, 1976; Waxman & Duschl, 1987). Given the wealth of previous research, the present study employed the use of students' perceptions of their classroom learning environment to assess such environments.

Over a number of decades many high inference instruments have been developed, administered and validated. They have been used successfully to assess the characteristics and impacts of classroom learning environment. Because of the extensive and well documented evidence of the reliability and validity of high inference measurements (see Section 2.3.2), it is intended to use such instrumentation and measurements in the present study.

From issues outlined earlier in this chapter (see Section 3.2.4) it is contended that the primary sampling unit be the individual, and therefore appropriate to measure private beta press for each individual examined and to use the individual mean as the unit of analysis. Based on these views, the present study used the individual means as the unit of analysis. Hence the three methodological principles that guided the collection of data in this study were:

1. Students' perceptions of their classroom learning environment be used to understand classroom learning environments.

2. A context-specific high inference instrument should be used to investigate classroom learning environments.
3. The employment of the individual mean as the appropriate unit of analysis to investigate multicultural classroom environments.

3.3 THE RESEARCH DESIGN

This section provides a comprehensive overview of the important elements of the research design. Section 3.3.1 provides a brief statement regarding the overall design of the study. Section 3.3.2 will examine the data collection methods used in the present study. Section 3.3.3 will discuss the variables, unit of analysis and data analysis of this present study. Section 3.3.4 will describe the data collection sites whilst Section 3.3.5 will examine the research period.

3.3.1 The Overall Design of The Study

The overall design of the present study had three stages. Stage 1 was to ascertain from key stakeholders (i.e. students, teachers and parents) key aspects of multicultural classroom environments with the view to developing an appropriate context-specific quantitative instrument for assessing multicultural classroom environments in Queensland Catholic secondary schools. Stage 2 was to administer a pilot multicultural classroom environment instrument to a small sample of students in a Catholic secondary school, and adjust and refine the pilot instrument for administration in the next stage. Stage 3 involved the administration of the final multicultural classroom environment instrument to 1,460 students across 24 Queensland Catholic secondary schools. The reason for having a three stage process was to allow the researcher the opportunity to develop and refine a suitable instrument, then administer the final version of the multicultural classroom environment instrument in order to validate this instrument. By having Stage 2 as a pilot stage, issues of instrument administration, length and suitability could be addressed in preparation for the administration of the final research instrument in

Stage 3. Chapter 4 provides full details of the instrument development procedures. The use of the final multicultural classroom environment instrument in Stage 3 provided for the collection of normative data to answer Research Questions 1 to 8 (see Section 1.2.2). Analyses used the individual mean as the unit of analysis (see Section 3.2.4).

The general research design methodology employed for the present study was ex post facto. This design was chosen because the nature of the present study does not permit any substantial manipulation of the independent variables (eg. school type, gender). Ex post facto research is the systematic empirical enquiry in which the researcher does not have direct control of the independent variable because of the fact that their manifestations have already occurred or because they are inherently not able to be manipulated (Kerlinger, 1977).

Because of the nature of the variables being investigated in this study (i.e. natural or life experiences) it was necessary to employ an ex post facto research design. It was not possible, because of the variables being investigated, to employ a pure experimental or even quasi-experimental approach. The ex post facto approach permits the investigation of certain variables in a controlled situation. This present study, by investigating variables, such as gender, school type and cultural background, in an ex post facto design, ran the risk of being limited by the recognisable inadequacies of such a research design. However, the research design of this present study offset some of the potential limitations to validity by ensuring strict research design procedures were followed.

Despite its limitations, ex post facto research design is a popular design in contemporary learning environment research. In the present study, the research design attempted to nullify the limitations of such a design. It was imperative that the design of the present study recognised potential confounding effects of extraneous influences and so employ an appropriately executed design to eliminate this risk. It was crucial in the present study to ensure that the selection of the sample was as random as possible. This in turn addressed issues of the validity of the study which will be discussed later in this chapter (Sections 3.4, 3.4.1 and 3.4.2).

The following sections of this chapter will further outline the research design for the present study, and examine some of the limitations of the current design and any attempts that have been made to address such limitations.

3.3.2 Data Collection Methods

A single instrument was developed for the measurement of the multicultural classroom learning environment in Queensland Catholic secondary schools. This instrument was designed to assess high inference private beta press. The procedures used to develop this instrument are documented in Chapter 4. Upon the initial development of the instrument it was trialled with a small sample of students. From this initial trial, adjustments were made, based on inadequacies shown in the trial. The final version of the instrument was then used across a representative sample of students in Catholic secondary schools throughout Queensland to collect data to answer the research questions posed for the present study.

3.3.3 Variables, Unit of Analysis and Data Analysis

This section focuses on the important issues pertaining firstly to the variables used in the study, and secondly to the analysis of the data.

The present study focused on the study of multicultural classroom environments in a variety of Queensland Catholic secondary schools. Environment variables were employed as criterion or dependent variables. The measurement of these variables was achieved by the use of a context-specific instrument which possessed several conceptually distinct scales (see Chapter 4).

The independent variables for this study were those defined in the research questions (see Section 1.2.2), namely School Type (Coeducational, Single-Sex Boys, Single-Sex Girls), Year Level (Years 8, 10 and 12), Subject Type (Religion, Study of Religion), Student Gender (Male, Female) and Country of Birth (Asia, Spanish Speaking, Pacific Islands, Europe, USA/Canada, Britain/New Zealand, Africa and Australia). As indicated in Section 3.3.1, it was important for the validity of this

study that adequate randomisation of the independent variables outlined above occurred. Further details pertaining to the validity of the present study will be examined later in this chapter (see Sections 3.4, 3.4.1 and 3.4.2). Previous research has been carried out on a variety of determinants of classroom environments. However, no single study involving Queensland Catholic secondary schools has investigated the influence of school type, year level, subject type, student gender and country of birth on the classroom environment. The overall significance of the present study was examined earlier in this thesis (see Section 1.4).

Investigating the effect of school type on the classroom environment was important to the Catholic school system. In Queensland there are coeducational and single-sex Catholic secondary schools. However, there is a trend for new Catholic secondary schools to be coeducational whilst the older, order owned Catholic schools remain single-sex. Thus, it is logical to investigate the classroom environment in Catholic coeducational and single-sex schools. This will enhance the external validity of this present study.

Year level was chosen as an independent variable because it is commonly thought that junior school classes have different environments to those of the senior school. Primarily, this view is based on the notion that the maturity of a senior school student is different to that of a junior school student, and that the delivery and structure of the curriculum differs between the junior and senior school. Years 8, 10 and 12 classes were chosen in the present study, because they provided an obvious age and year level difference across the total spectrum of secondary schooling. Students in Year 8 are typically 13 years old, students in Year 10 are 15 years old and, students in Year 12 are 17 years old. Year level was also chosen because of the significance of middle schooling in Queensland education and the recently formulated Queensland government Education Training Reforms for the Future (ETRF).

The inclusion of the subjects, Religion and Study of Religion, was justified because the majority of secondary school students in Catholic secondary schools study one of these subjects as part of their curriculum. They are also generally thought to be different in terms of content, style of teaching and influence on a student's Overall position (OP) and so serve to give a cross-sectional view. Only a limited amount of

research has been carried out in Religion and Study of Religion classroom environments.

Gender was considered an appropriate independent variable because past studies have shown that girls' perceptions of their classroom learning environment differs to that of boys' (Fraser, McRobbie & Giddings, 1993). Investigating whether this pattern exists in Queensland Catholic secondary schools is a valuable research direction.

The inclusion of country of birth was seen as important because Australia has become increasingly multicultural in recent decades (Department of Immigration and Multicultural and Indigenous Affairs, 2005). This increase in cultural diversity is translating into the classroom environments of Catholic secondary schools in Queensland (Queensland Catholic Education Commission, 2004). As well, very little has previously investigated cultural diversity in classroom learning environments and the effect that cultural background has on students' perceptions of their learning environment in Queensland Catholic secondary schools.

The individual mean was used as the unit of analysis for this study because the individual was the primary sampling unit. This is consistent with discussion earlier in this chapter (Section 3.2.4) that emphasised that it was imperative that the appropriate level of analysis be employed which best suits the hypothesis being tested. Since the individual was the unit in the present study, it was appropriate that a private beta press be adopted, and the individual mean form the unit of analysis. The decision to use the individual mean as the unit of analysis is further supported by the fact that the research questions (see Section 1.2.2) focus on the individual.

It should be noted that the means for the different dimensions of the classroom environment were not aggregated to form one overall classroom environment assessment. Rather the distinctiveness of the environment scales was preserved through the use of Multivariate Analysis of Variance (MANOVA). The use of MANOVA, which allows 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 variables and the independent variables. In the present study, ANOVAs

(one for each dependant variable) were conducted only when the MANOVA yielded a significant result. While there has been some debate over the appropriateness of this research (see Keselman et al., 1998), it remains a widely accepted benchmark of educational research.

According to Stevens (1992), there are three statistical reasons that favour MANOVA. First, the use of a series of univariate ANOVAs leads to an inflated overall Type I error rate. Second, univariate tests ignore the correlation among the variables. Third, multivariate tests are more powerful, especially when small differences on several of the variables combine to produce a significant result. None of the individual ANOVA results may be significant, even though the MANOVA result is significant.

In some comparisons, a grouping variable can have more than two values (eg. three school types, eight country of birth groups) and the ANOVA will not indicate which pairs of values of the grouping variable have scale values that differ significantly. In the present study, Tukey's post-hoc procedure was employed to identify such pairs only if the ANOVA result was significant. For example, a significant ANOVA with school type as the grouping variable, does not indicate which particular pairs of school types are significantly different from each other. Therefore, a post-hoc procedure was required. The level of significance accepted for the statistical tests was 0.05 or 0.001.

3.3.4 Data Collection Sites

This section describes the sites used for the data collection purposes. The discussion focuses on three areas: population, school sample and student sample. In order to address the particular research questions of the present study, the following sampling guidelines were considered mandatory. The Catholic schools sampled were required to have the following: Religion and Study of Religion subjects; students in Years 8, 10 and 12; students from a variety of cultural backgrounds.

3.3.4.1 Population

In 2002, there were 92 Catholic secondary schools in Queensland. Of these schools there were 3 senior colleges (Years 11 and 12 only) and 7 junior colleges (Years 8, 9 and 10 only). These schools therefore did not meet some of the mandatory sampling requirements. Consequently there were 82 Catholic secondary schools in Queensland that met the required sampling criteria outlined in Section 3.3.4. There were 48 coeducational, 15 single-sex boys', and 19 single-sex girls' Catholic secondary schools.

3.3.4.2 Sample of Schools

The profile of the sample of 24 Queensland Catholic secondary schools used in the present study is outlined below. One objective of the research design for the present study was to use a sample of Catholic secondary schools which was, as far as possible, representative of the general distribution of Queensland Catholic secondary schools. To this end there were 8 coeducational, 8 single-sex boys' and 8 single-sex girls' Catholic secondary schools that formed the sample for the present study. It should be noted that no schools were selected outside of the Metropolitan Brisbane area. This was due to due to potential difficulties in administering the research instrument. By having a representative sample of schools it provided some assurance that a reasonable cross-sectional representation of the population was used for data collection purposes. As part of the initial validation process for the instrument used in the present study, one school was used to validate the pilot instrument. This school was a co-educational school in the Brisbane Metropolitan area.

3.3.4.3 Sample of Students

In each of the 24 schools that formed part of the data sample in the present study, responses were obtained from students who satisfied the following criteria: Religion or Study of Religion classes; Year 8, Year 10 or Year 12 students; students from various cultural backgrounds. A total of 1,460 students from 24 Catholic secondary schools comprised the complete student sample.

3.3.5 Research Period

The research reported in the present study was conducted during 2001 and 2002. The key periods of the research are shown in Table 3.1. It should be noted that the data collection was undertaken in a four week period. This assisted issues of validity of the study.

TABLE 3.1

RESEARCH PERIOD AND ACTIVITY FOR EACH STAGE OF THE RESEARCH PROGRAM

Stage	Period	Activity
1	February 2002 to September 2002	Instrument Development
2	November 2002 to February 2003	Quantitative Data Collection in Pilot School and Instrument Refinement
3	April 2003	Quantitative Data Collection in 24 Schools

3.4 VALIDITY

The previous section discusses the research design for the present study. Because the validity of the research design is central to any program of research, this section explores the internal and external validity issues of the present study. Validity relates to the theoretical aspects of the measurement process and how these aspects connect with the empirical data. It refers to the extent to which an empirical indicant measures what it purports to measure (Zeller, 1988). For quantitative research, internal validity refers to the extent to which the observed effect be attributed to the treatment or

independent variable of interest, rather than to extraneous sources, so that comparisons can be produced that are free from bias (Glass & Stanley, 1970). External validity is the extent to which the results of the research are generally applicable to other situations (Dorman, 2001).

Both types of validity are needed in good research design. Validity in quantitative research depends on careful instrument construction to ensure that the instrument measures what it is supposed to measure (Yeo, 2002). However, at least in quantitative designs, features increasing one form of validity, may jeopardise the other. Internal validity can be improved by having extensive control of variables. However, such excessively controlled research can be so far removed from reality that its findings have limited generalisation and so decreases the external validity of the study. Although an internally valid research project may or may not be externally valid, research that lacks internal validity cannot be externally valid. Consequently, the insurance of internal validity was of major importance for the present study. The following sections will examine some possible threats to the internal and external validity of this study.

3.4.1 Internal Validity

Internal validity is concerned with the issue of whether the experimental treatments, in fact, make a difference in the specific experiments under scrutiny, or can they be ascribed to other factors (Glass & Stanley, 1970). Preventing the confounding extraneous variables from interfering is a difficult task. However, a design that includes a proposal for a clear causal relationship and allows for the control of all other possible contributing variables, is said to possess a high level of internal validity.

In an ex post facto research design there are a number of threats to the internal validity of the research design. Campbell and Stanley (1963) and Keeves (1998) have identified a number of threats to the internal validity of quantitative research projects, including history; maturation; statistical regression; testing; selection, maturation and interaction; differential selection; instrumentation; subject attrition.

The following sections briefly discuss each of these threats and how each applies to the present study.

3.4.1.1 *History*

History refers to the occurrence of any events in the environment which are not part of the research design, but which may have an effect on the dependent variable. It is quite conceivable that the longer the time between measurements of the dependent variable, the more likely something else may influence and so diminish the researcher's ability to attribute a causal effect. In the present study, data was collected over a two week period, thus minimising any effect on the internal validity of the study.

3.4.1.2 *Maturation*

Maturation refers to changes in subject during the course of the research. This may affect the internal validity if the subjects have changed during the course of the research period and so as to affect the observable results. In the present study, the period of data collection in any school was very short and thereby dramatically diminished any effect of maturation on the internal validity of the study.

3.4.1.3 *Statistical Regression*

Statistical Regression is a tendency for groups with extreme scores to have scores closer to the overall mean or subsequent tests, not necessarily because of the effect of the independent variables. Like maturation effects, regression effects increase systematically with the increasing interval of testing. Again in the present study, the period of data collection was very short to minimise the impact on this research design. It did not involve pre-tests and post-tests to diminish any effect on the internal validity of the design.

3.4.1.4 *Testing*

Testing refers to improved scores on a post-test because of the experience of taking a pre-test. In other words, the participants may become sensitised to particular questions which may in turn affect their scores. Despite the fact that a trial instrument was used in one school, because of the short period of data collection this was not seen as a significant influence on the internal validity of the present study. All other students participated in the final research instrument only.

3.4.1.5 *Selection, Maturation and Interaction*

In this study, combinations of selection, maturation and interaction might affect one group differently from another. However, in the present study, the administering of the research instrument was carried out in the same manner at each of the selected schools with a very short period for data collection. Both of these factors reduce the impact of selection maturation, and interaction on the internal validity of the present study.

3.4.1.6 *Differential Selection*

Differential selection refers to the question of whether the process of selecting the subject has influenced the findings (Campbell & Stanley, 1963). This may occur when pre-formed groups are used and those groups were different before the study began. This could result in groups responding differently to a truly representative group, thus reducing internal validity.

In the present study the selection of schools and students was governed by two factors. First, the ethics of conducting any research requires that the participants are willing to be involved in the research project. That is, all the participants surveyed were volunteers. Second, it was considered important that the sample of schools chosen be a representative cross section of various school types in Queensland. As far as possible a cross section of school types was achieved through random selection.

The selection of individuals within each school was again governed by the willingness of the students to be involved in the research project, and their ability to match the preset criteria (eg. Year 12 Religion). The present study used a large sample of students.

Although the participants were volunteers and their selection was dependent upon satisfying preset criteria, great care was taken to ensure that the sample was representative of the population so as to diminish any threats to the internal validity of the study.

3.4.1.7 *Instrumentation*

Instrumentation refers to the unreliability or lack of consistency in the measuring instruments used (Campbell & Stanley, 1963). If instruments are unreliable or poorly developed, there is the potential to introduce serious errors into the study.

In the present study a significant amount of time was devoted to the development of a reliable multicultural classroom environment instrument. Chapter 4 of this thesis details the instrument development and validation process. It is also relevant to note that guidelines for the scale development were important during the instrument development process (Anderson, 1982; Fraser & Rentoul, 1982; Gardner, 1975; Murphy & Fraser, 1978). The appropriate administration of the multicultural classroom environment instrument was important to the context of this study. There are a number of issues to be considered. First, the administration of the instrument was done by the researcher. Second, consistent instructions were given to all participants at the time of administering the instrument. Third, students were informed that the results were confidential to the researcher. Fourth, that there were no right or wrong answers. Although instrumentation has the potential to adversely affect the internal validity of the study, sufficient guidelines and attention were given to the design, validation and administration of the instrument in the present study in order to diminish any impact on the internal validity of the study.

3.4.1.8 *Subject Attrition*

Subject attrition refers to the possible loss of participants during the course of the study (Campbell & Stanley, 1963). This may result in misrepresented results that are due to extraneous variables other than those of the study. In the present study, as the student questionnaires were answered over a short period, there was no serious threat to subject attrition. A possible threat to attrition was that some students, due to language difficulties or academic difficulties, might have vocabulary difficulties and become fatigued during the administration of the instrument. This threat was reduced by ensuring that items used simple vocabulary, with language appropriate to secondary school students. The instrument was kept to a reasonable length to reduce the threat of subject attrition and to diminish any threat to the internal validity of the present study.

3.4.2 **External Validity**

External validity refers to the general application of the results to the population at large (Anderson, 1990; Dorman, 2001). In order to ensure that the external validity of a study is maintained it is important that both the samples and the conditions under which the study is carried out, is representative of the populations and situations to which the results are to apply. There are a number of factors that threaten the external validity of a study and so limit the degree to which generalisations can be made from the particular study to other populations or settings. Such threats include: Lack of Representativeness of Available and Target Populations; Failure to Define Independent Variables Explicitly; Hawthorne Effect; Inadequate Operationalising of Dependent Variables; Pre-test Sensitisation (Dorman, 1994, 2001).

The following sections briefly discuss each of these threats and outlines how they apply to the present study.

3.4.2.1 *Lack of Representatives of Available and Target Populations*

While those participating in the study may be representative of an available population, they may not be representative of the population to which the experiment seeks to generalise its findings. In an ex post facto design, as is the case in the present study, where the independent variables are observed rather than manipulated, it is imperative that consideration is given to defining and randomly selecting the sample from the larger population.

Classroom environment researchers cannot arrange a totally random sample of schools and students from the target populations. All subjects have the right to be excluded from the research project and so the total randomisation of a sample would violate the ethics of conducting contemporary classroom environment research. There is always the possibility of some inbuilt bias because some schools support research and others do not. There are also some students who do not wish to participate in field research.

In the present study, the data collection sites were chosen in the following manner. All of the Queensland Catholic schools in the Brisbane Archdiocese catering for students in years 8 to 12 who had Religion and Study of Religion classes were invited to participate in the study. From the schools indicating a willingness to be involved in the study, contact was made and access requested, and the appropriate ethical clearance and permission for students to participate was gained according to the current research guidelines.

There were 1,460 students from 24 Catholic secondary schools in Queensland who participated in the present study. The school where the initial validation of the pilot instrument was administered was chosen because of the researcher's knowledge of the school and its willingness to be involved in the study. In the research design serious consideration ensured that a representative sample was chosen to positively address the threat to the external validity of the present study.

3.4.2.2 *Failure to Define Independent Variables Explicitly*

It is imperative that if research projects are able to be replicated or that results obtained are to be generally applicable, then the independent variables must be adequately described by the researcher.

In the present study, five independent variables were investigated: school type, year level, subject type, student gender and country of birth. Each of these variables has a clear meaning and was defined in this thesis (See Section 3.3.3). This allows the easy replication of this study and enhances its external validity.

3.4.2.3 *Hawthorne Effect*

The Hawthorne Effect refers to the tendency of the participants to act differently because they are aware of their role as research subjects. (Gillespie, 1991). In the present study a questionnaire was used and all participating students knew that they were part of a data gathering exercise. However, by keeping the questionnaire relatively simple, it was hoped that the students would provide authentic answers and not be influenced unduly by their involvement in a research program. The research instrument was designed so that it would be difficult for the students to identify underlying scales. Details of the instrument design will be discussed in Chapter 4 of this thesis.

To further reduce the influence of the Hawthorne Effect all students were informed that the information collected was confidential and that there were no right or wrong answers. Also, simple instructions were given before the administration of the research instrument in an attempt to reduce the effect of the students thinking that they were participating in an elaborate experiment.

Since the present study required students to make judgements based on their classroom experiences over an extended period of time, the possibility of a novelty effect was reduced. Students participating in the research were given no indication that other students in other Catholic schools were also participating in the same

research project. All the factors outlined above were designed to minimise the Hawthorn Effect and so enhance the external validity of this pre-test study.

3.4.2.4 *Inadequate Operationalising of Dependent Variables*

The external validity of a research project may be diminished if the dependent variables operationalised in the study do not have validity in the non-experimental setting.

The dependent variables for this study were the set of classroom environment scales. These scales were developed with the specific notion of being applicable in all Queensland Catholic secondary schools and not just simply the sample used in this study. Chapter 4 of this thesis shows that the classroom environment scales have been operationalised in a manner that enhances the general applicability of the findings.

3.4.2.5 *Pre-Test Sensitisation*

Where subjects participate in a number of tests or questionnaires as part of a study there is the risk that they may become sensitised to the questions and so alter their responses (Nisandchik & Marchak, 1969). This would adversely affect the results and in turn the external validity of the study. In the present study, the instrument was administered on only one occasion to each student and so pre-test sensitisation was not considered a possible threat to the external validity of the study. The number of students involved in the initial validation of the research instrument was minimal compared with the total number of participants, and so any sensitisation of these students was considered insignificant to the overall result.

3.5 CHAPTER SUMMARY

The purpose of the present study was to investigate classroom environment in Queensland Catholic secondary schools. This chapter provides a detailed discussion of the particular methodological issues and decisions of the study. Three

methodological principles, which incorporate the present state of learning environment research, have been developed. The principles require firstly the use of students' perceptions of their classroom learning environment. Second, the development of a context-specific high inference instrument. Third, the employment of the individual mean as the appropriate unit of analysis.

A three stage research program that operationalised the three methodological principles of the present study was adopted. In the first stage, initial qualitative interview data was used to assist with the development of an appropriate, context-specific quantitative instrument for assessing multicultural classroom environments in Queensland Catholic schools. Full details of the development and validation of this instrument is provided in chapter 4 of this thesis.

The second stage involved administering a pilot form of the multicultural classroom environment instrument to a small number of students from one of the participating Catholic secondary schools. From this, appropriate analysis, attention to issues surrounding internal and external validity and refinement of the pilot instrument was undertaken. The result was the construction of a final version of the multicultural classroom environment instrument used in the present study.

The third stage of the present study involved the 1,460 students from 24 Catholic secondary schools in Queensland completing the multicultural classroom environment instrument used for the present study. Using the data collected, the research questions were answered. Multivariate Analysis of Variance (MANOVA), Analysis of Variance (ANOVA) and some non-parametric tests were used to investigate the influence of these determinants on the classroom environments.

Chapter 4 will examine the development and validation of the classroom environment instrument used in the present study.

CHAPTER 4

DEVELOPMENT AND VALIDATION OF INSTRUMENT

4.1 INTRODUCTION

This chapter reports the development and validation of the instrument used to assess psychosocial environments in the present study of multicultural classroom environments in Queensland Catholic secondary schools. A single instrument was developed to assess the multicultural classroom environments in a variety of Catholic schools. The general procedure adopted was to use existing instruments as a basis for the construction of a multicultural classroom environment instrument that would assess the important environment dimensions of multicultural classroom environments within Queensland Catholic secondary schools. Thus, existing scales and associated items needed to be modified and supplemented by new scales, so as to tap into distinctive environment dimensions.

The purpose of this chapter is to examine the development and validation process of the research instrument used for the present study. Accordingly, the chapter is divided into a number of sections. First, Section 4.2 focuses initially on the instrument development criteria, and then on the instrument development and validation procedure used in this study. Second, Section 4.3 reports on the application of the development and validation procedure to form the classroom environment instrument. Finally Section 4.4 summarises the main features contributing to the development and validation of the instrument used in the present study.

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 multicultural classroom environments in Queensland Catholic secondary schools. It is important to distinguish between instrument development *criteria* and instrument development and validation *procedure*.

Dorman, (1994) defined instrument development criteria as “... concerned with standards of judgment, rules or principles that can be used to guide instrument development” (p. 115).

It is important to note that the instrument development criteria do not indicate the specific decisions taken during the instrument development process. Rather, the criteria are indicative of the guidelines followed, and the underlying directions taken, in order to develop a research instrument for this present study. The actual procedures followed in both the development and validation of the research instrument, is described as the instrument development and validation procedures. These procedures use the instrument development criteria as a guide in establishing the actual processes used and the justification of these processes. 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 guidelines contained in the development criteria adopted for this present study.

4.2.1 Instrumental Development Criteria

Drawing on the work of previous learning environment researchers, four instrument development criteria were established for the present study. They were: Consistency with literature; Coverage of Moos’ three General

Dimensions; Salience to stakeholders; and Economy. Each criterion will be examined in the following section.

4.2.1.1 *Consistency with Literature*

The instrument was to be consistent with literature on both Catholic schools and cultural diversity within Catholic schools. Chapter 2 of this thesis reviews such literature and highlights specific characteristics of classroom environments of contemporary Catholic schools and cultural diversity within such classroom environments.

4.2.1.2 *Coverage of Moos' Three General Dimensions*

The development of modern learning environment research instruments traditionally attempt to incorporate or cover Moos' general dimensions (Moos, 1974a, 1974b, 1987). Moos, (1974, 1986) suggested that any instrument assessing psychosocial aspect of learning environments should incorporate the following dimensions:

- **Relationship Dimension** – identifies the nature and intensity of personal relationships within the environment and assesses the extent to which people are involved in the environment, and the extent to which they support and help each other.
- **Personal Development Dimension** – assesses the basic direction along which personal growth and self enhancement tend to occur.
- **System Maintenance and System Change Dimension** – involves the extent to which the environment is orderly, clear in its expectations, maintains control and is responsive to change.

The instrument for the present study was designed to fulfil these criteria.

4.2.1.3 *Salience to Stakeholders*

In order for the instrument to be salient with key stakeholders, it was considered important that key stakeholders (i.e. teachers, students and parents) be involved in the development process. Clearly, this criterion ensures that the instrument focuses on the realities of cultural diversity within classroom environments of contemporary Catholic secondary schools as perceived by people who are integral to these classrooms.

4.2.1.4 *Economy*

Since the pressures of time in a contemporary Catholic secondary school are considerable, it was considered important that the final instrument be economical in terms of the time needed for administration and scoring.

4.2.2 **Instrument Development and Validation Procedure**

In order to provide an appropriate framework for the development and validation of an instrument to assess multicultural classroom environments in Queensland Catholic secondary schools, the present study employed a five element instrument development and validation procedure. The purpose of this section is to describe and justify this procedural plan as outlined in Figure 4.1.

Chapter 2 of this thesis consisted of an extensive review of existing literature of cultural diversity, learning environments and Catholic schools. The purpose of Element 1 of the procedure was to bring the literature based ideas into the instrument development process. Element 2 of the procedure involved obtaining perceptions of key stakeholders in Queensland Catholic secondary schools. In this stage key stakeholders in Catholic secondary schools were identified – namely staff, students and parents. Five representatives from each of the stakeholder categories were selected from a range of Catholic secondary schools and invited to be a part of a short interview process. For each participant, it was emphasised that their involvement was on a voluntary basis, and they were aware that they could withdraw from the process

at any time. Each participant was involved in a short interview, and asked to respond to the question ‘What is important in multicultural classroom environments in a Catholic secondary school?’ From the interviews, issues pertaining to the multicultural classroom environments in Catholic secondary schools were gleaned and categorised into the three general dimensions for human environments as outlined by Moos, i.e. Relationship, Personal Development and System Maintenance and System Change.

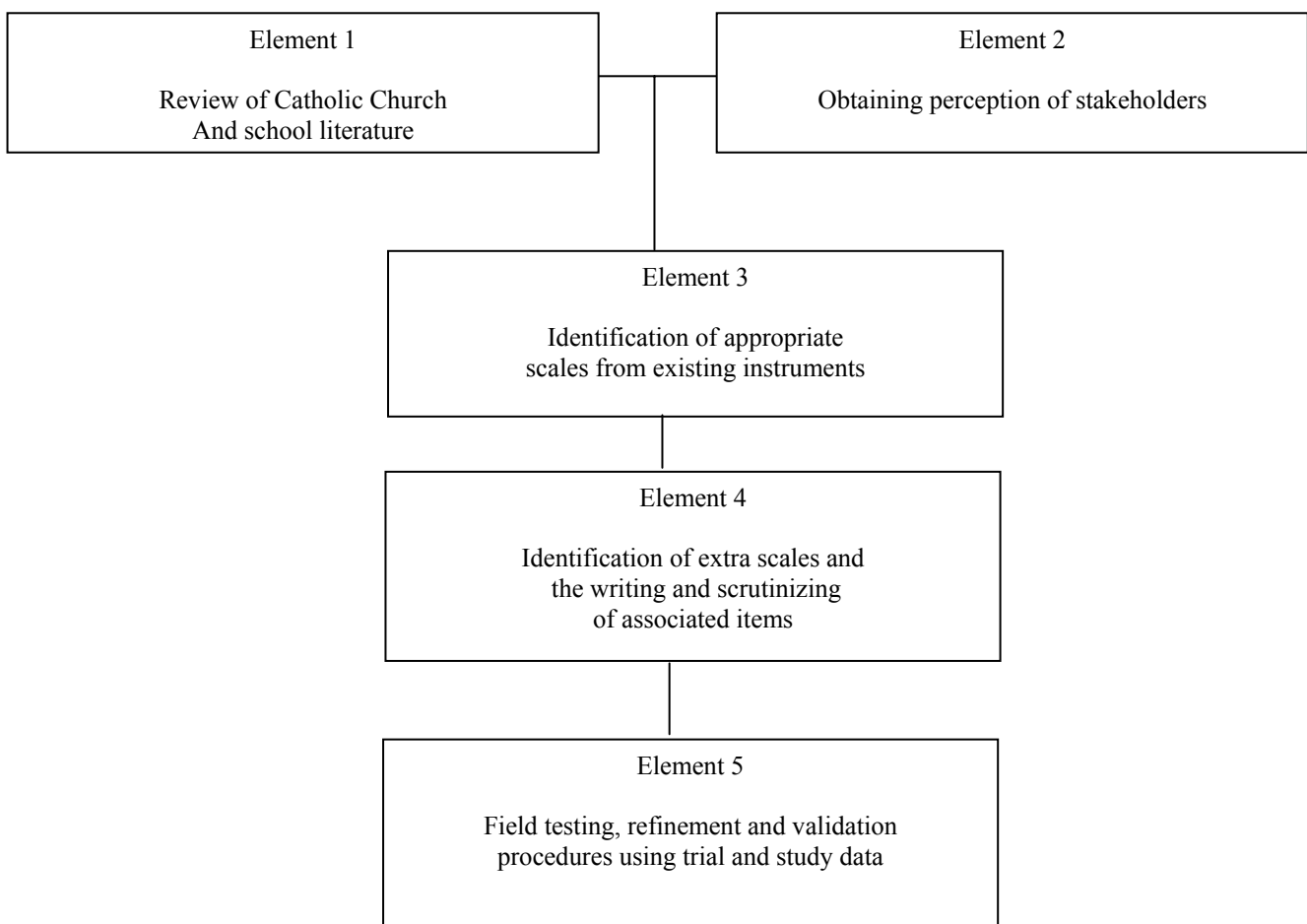


Figure 4.1
The Five-Element Instrument Development and Validation Procedure

The purpose of Element 2 of the Instrument development and validation procedure was firstly to obtain first-hand perceptions of cultural diversity in the classroom environments of Catholic secondary schools from people who are integrally part of such environments. The second purpose of Element 2 was to compliment the theoretical literature based perceptions of Element 1 with humanised, experimental perceptions of key stakeholders in order to further legitimise the instrument development process.

Chapter 2 introduces the view that, over the past 40 years, much progress has been made in conceptualising and assessing classroom environments (Fraser, 1994; McRobbie & Fraser, 1993). An important aspect of Element 3 of the procedure was to recognise this work and integrate it with Elements 1 and 2. Relevant scales were identified from existing instruments (See Section 2.3.2, Table 2.1, Table 2.2), forming the basis for the development of the classroom environment instrument for this present study.

The purpose of Element 4 was to supplement the scales identified in Element 3 with new scales that would investigate distinctive aspects of the contemporary culturally diverse classroom environments of Catholic secondary schools. To assist with the validation process, the proposed scales for the present study were presented to a range of personnel including Catholic school staff and University academic staff, with the purpose of gaining feedback on relevance and suitability, and to address issues of validity and ambiguity. It was expected that by cross checking the proposed scales with both school and university staff, enhanced validity would be achieved.

Finally, Element 5 of the procedure, after the appropriate modifications suggested in Element 4 were made, was the administration of the pilot multicultural classroom environment instrument to a sample of students in Queensland Catholic secondary schools. After administering of the pilot instrument, item-scale correlations, scale-scale correlations, internal consistency, reliability and discriminate validity indices were calculated. Factor analyses were performed on the data sets. Based on these statistics and analyses, a final version of the classroom environment instrument for use in the main study was finalised. The development process described above and illustrated in Figure 4.1 is consistent with the intuitive-rational scale development

procedure suggested in Fraser (1977) and Murphy and Fraser (1978) which involved the identification of salient dimensions, writing the items, field testing and item analysis.

Section 4.2.1 of this thesis outlines the four Instrument development Criteria for this present study. Figure 4.1 outlines the five-Element Instrument Development and Validation Procedure for the present study. It is important for the present study that there is some alignment between the Instrument Development Criteria and the Instrument Development and Validation Procedure. In order to demonstrate the association between the criteria and the procedure, Table 4.1 has been assembled. It highlights each development criterion and matches it with at least one of the Elements of the development and validation procedure. It therefore indicates that the five-Element Instrument Development and Validation Procedure, outlined in Figure 4.1, addresses fully the Instrument Development Criteria outlined in Section 4.2.1.

4.3 DEVELOPMENT AND VALIDATION OF CLASSROOM ENVIRONMENT INSTRUMENT

This section reports on the development of the classroom environment instrument. This discussion follows the framework of the five-element development and validation procedure discussed in Section 4.2.2 and detailed in Figure 4.1. The final outcome of this process was a 64 item questionnaire with 8 scales. Validation data supporting this version of instrument are provided.

4.3.1 Classroom Environment: Literature and Stakeholders Perceptions

Chapter 2 of this thesis provides insight into the important characteristics of multicultural classroom environments in Catholic secondary schools. Whilst these characteristics are themselves diverse, it is evident from literature pertaining to Catholic schools, that central to any classroom environment is the pivotal role of

TABLE 4.1

CROSS REFERENCING OF DEVELOPMENT CRITERIA WITH
ELEMENTS OF THE DEVELOPMENT AND VALIDATION PROCEDURE

Development Criterion	Development and Validation Element
Consistency with literature	1. Review of Catholic church and school literature, multicultural literature and learning environment research (from Chapter 3)
Moos' general categories	3. Identification of appropriate scales from existing instruments (from Chapter 1) 4. Identification of extra scales and the writing and scrutinising of associated items
Salience to stakeholders	2. Obtaining perceptions of stakeholders 4. Identification of extra scales and the writing and scrutinising of associated items
Economy	3. Identification of appropriate scales from existing instruments (from Chapter 1) 4. Identification of extra scales and the writing and scrutinising of associated items

Gospel Values. This is evidenced in writings from the Congregation for Catholic Education which detailed:

The inspiration of Jesus must be translated from the ideal into the real. The Gospel spirit should be evident in a Christian way of thought and life which permeate all facets of the educational climate.

(Congregation for Catholic Education, 1988, p. 24)

The Congregation for Catholic Education later provides an indication of what students should experience in a Catholic school and therefore in its classrooms:

The religious dimension of the school climate is expressed through the celebration of Christian values in Word and Sacrament, in individual behaviour, in friendly and harmonious interpersonal relationships, and in a ready availability. Through this daily witness, the students will come to appreciate the uniqueness of the environment to which their youth has been entrusted. If it is not present, then there is little left which can make the school Catholic.

(Congregation for Catholic Education, 1988, pp. 24 – 25)

As has been indicated in previous sections of this thesis, one of the criteria employed for the development of a multicultural classroom environment instrument was the coverage of Moos' three general dimensions. The first of these dimensions is the Relationship Dimension. From the literature review reported in Chapter 2 and comments by key stakeholders, there are a number of key relationship dimensions identified in multicultural classroom environments in Queensland Catholic secondary schools. First, the quality of student-student relationship. Second, the importance of teacher-student relationship. Third, the significance placed on relationships with members of the community, particularly the home-school relationship.

Contemporary Catholic schools are intensely relational (Dorman, 1994) in that they emphasise high quality relationships between all members of the school community. The Queensland Education Commission (1978) recommended that a school's climate be evaluated in terms of its 'internal relationships.' Relationships exist not only between staff and students, but also between staff and staff, student and student and staff and parent. The importance placed on relationships within a Catholic school is consistent with the Vatican documents on education (viz. Sacred Congregation for Catholic Education: *The Catholic School*, 1977; Sacred Congregation for Catholic Education: *Lay Catholics in Schools: Witness to Faith*, 1982; Congregation for Catholic Education: *The Religious Dimension of education in a Catholic school*, 1988; and Congregation for Catholic Education: *The Catholic School on The*

Threshold of The third Millennium, 1998). The importance of relationships is also important within the classroom. From the literature review of Chapter 2, the quality of student-student relationships and teacher-student relationships were identified as important in the classroom environments of Catholic schools. This facet of a Catholic school was reinforced by the Queensland Catholic Education Office (1979) when it detailed that “The Catholic school fosters genuine human relationships among staff, students and others associated with the school” (Queensland Catholic Education Office, 1979, p. 3).

The importance of relationships in Catholic schools can also be extended to the decision making processes that take place. Contemporary Catholic schools advocate participatory decision making and the use of relational power. This is very different to the early authoritative Catholic schools of the 1800s and early 1900s. Britt (1975) suggested that there should be close links between family and school in the Australian Catholic school, as it allows for the establishment of a strong community relationship. This concept of relationship is in line with the doctrinal shifts of Vatican II, which advocated the human element of our lives (Declaration on Christian Education: *Gravissimum Educationis*, 1965). The value of establishing links between family and school is crucial in a culturally diverse modern Australian society. The increase in cultural diversity within Australia has meant that cultural groups are able to participate in their children’s education, despite barriers such as language and cultural difference (Garcia, 1999; Neito, 2000).

A number of personal development dimensions have also been identified in the literature reviewed in Chapter 2. One personal development dimension identified by both the literature and key stakeholders is the degree of co-operation among students in the classroom. This dimension follows from the need for personal and spiritual growth and community orientation evident in Catholic schools eluded to earlier in this section. It is important to note that the concept of co-operation is identified and should not be confused with the concept of competition. The Queensland Catholic Education Office, in describing a Catholic school stated:

It will encourage co-operation rather than competition and a controlled freedom that allows students to develop a sense of social responsibility as well as their personal identities.

(Queensland Catholic Education Office, 1979, p. 3)

Further to the distinction between co-operation and competition is the centrality of Gospel Values to Catholic Schools. Whilst genuine competition amongst students is important to the holistic development of a student, the 'win at any cost' mentality is in direct contradiction to the underlying concept of Christ-centeredness that Church documents advocate as necessary as fundamental to Catholic schools. Catholic schools have a commitment to a Christian view of the world. The Congregation for Catholic Education (1988) emphasised the centrality of the Gospel:

The inspiration of Jesus must be translated from the ideal into the real. The Gospel spirit should be evident in a Christian way of thought and life which permeates all facets of the educational climate.

(Congregation for Catholic Education, 1988, p. 24)

However, it must also be recognised that forms of competition which are inconsistent with the Gospel Values do exist in some Catholic schools. Hence the inclusion of a scale to examine competition in the present study.

A second personal development dimension that was identified from the literature was congruence. Congruence can be defined as the association between learning in the classroom environment and the student's home environment. Students from different cultural backgrounds may experience conflict between learning in their classroom environment and their home environment. The culturally diverse nature of contemporary Catholic schools classroom environments has necessitated the need to consider the traditions of other cultures, including how knowledge is transmitted and how teaching and learning are carried out.

Researchers have examined particular groups of students in regard to their world views (Anderson, 1988), styles of learning (Oakes, 1990), and attitudes (Wiggins, Atwater & Gardner, 1992). Much of this research suggests that students who come

from different countries display a distinctive culture. That is, differences in attitudes, styles of learning etc, can be explained more comprehensively if the local culture is considered. Culture is learned, people are not born with a culture (Stull & Von Till, 1994). Many students come from countries with widely differing cultural practices, and at times the teaching and learning strategies employed in classrooms can be perceived as being in conflict with the natural learning strategies of the learner (Cunningham-Florez, 2001; Slonic & Del Vecchio, 1992). Since teachers can use practices that may inadvertently conflict with the students' previous learning patterns, home environment and values, there is an increasing need for teachers to be sensitive to the important cultural milieu into which their teaching is placed (Thaman, 1993). Okebuhola (1986) suggested that the cultural background of the learner can have a greater effect on education than does the substantive nature of the course content. Furthermore, it is suggested that unless students can apply what is being taught to their own cultural background, then many of the teaching strategies used by teachers are likely to be less than effective in enhancing learning (Dhindsa & Fraser, 2003).

A system change dimension that warranted investigation was deference, which may be defined as the student's ability to voice their own opinion or the degree of compliance that they show. Literature reveals that within different cultural groups degrees of emphasis are placed on the importance to comply or display respectful conduct. Cunningham-Florez (2001) asserted that some students from non-English speaking backgrounds come from educational systems where the teacher is regarded as the 'unquestioned expert'. This view would influence the student's ability or willingness to voice their opinion or their degree of compliance they demonstrate in the classroom environment. As contemporary Australian Catholic schools continue to increase their cultural diversity in both scope and clientele, it is deemed prudent to investigate specific cultural dimensions such as congruence and deference.

The importance of individualisation in the classroom was identified as another system maintenance and system change dimension that warranted assessment. Historically, Catholic schools have been characterised by large classes and an associated rigid discipline. However, the contemporary Catholic school has moved from this position to one which dedicates a greater significance to the uniqueness of the individual. This

shift coincides with the post Vatican ‘humanising’ nature of the Catholic Church (Declaration on Christian Education: *Gravissim Educationis*, 1965).

Individualisation involves a shift in thinking about how learning occurs. It involves a shift in the role of both students and teachers in the learning process, as well as the involvement of parents in learning. The increasing diversity of contemporary Catholic school classroom environments, and therefore the need to recognise the individual, is evidenced by the diversity of cultures, learning needs, curricula and assessment practices that are now part of a classroom environment.

A further system maintenance and system change dimension identified was teacher authority or teacher control. Both from the literature and the view of stakeholders, the relevance and importance of teacher authority, particularly evidenced by classroom discipline, warranted investigation.

In summary, upon a review of the literature and an investigation of key stakeholders, nine important classroom environment dimensions for contemporary Catholic schools have been identified: Student-Student Relationship, Student-Teacher Relationship, Gender, Student-Student Competition, Knowledge Transmission, Teacher Control, Degree of Compliance, Individualisation and Modelling and Classroom Organisation.

4.3.2 Appropriate Existing Classroom Environment Scales

From investigations of the existing literature and perceptions from key stakeholders, Elements 1 and 2 of the Instrument Development and Validation Procedure have been fulfilled. The result was the identification of nine dimensions that in turn would need definition and measurement in order to provide an adequate assessment of the classroom environment.

The task of developing a multicultural classroom environment instrument was simplified by considerable research efforts in this area over the past 40 years. Of the myriad of instruments that have been developed, a number have particular relevance to this study. They include: Learning Environment Inventory (LEI; Fraser, Anderson & Walberg, 1982), Classroom Environment Scale (CES, Moos & Trickett, 1987), the

Individualised Classroom Environment Questionnaire (ICEQ; Fraser, 1990), Classroom Environment Questionnaire (CEQ; Dorman, 1994), Cultural Learning Environment Questionnaire (CLEQ; Waldrip & Fisher, 1996), Student Cultural Learning Environment Questionnaire (SCLEQ, Waldrip & Fisher, 1996), What is Happening in Your Class (WIHIC; Fraser, McRobbie & Fisher, 1996), the Multicultural Learning Environment Inventory (MCLEI; Giddings & Waldrip, 1997) and the Socio-Cultural Environment Scale (SCES; Jegede & Okebukola, 1988). These instruments have had extensive use, and validation data are available for a range of Australian and International settings. Scales to assess student-student relationship, student-teacher relationship, gender, student-student competition, knowledge transmission, teacher control, degree of compliance and individualisation were constructed or selected from existing instruments. The specific development detail for each of these eight scales is outlined in the remainder of this section.

From the review of existing Classroom Learning Environment Literature (Section 2.3), it is apparent that many instruments exist that have been validated in a range of classroom settings, and would be appropriate for usage in this present study. However, upon further examination of the available instruments the following were identified by the researcher as the most appropriate for this present study. The instruments are as follows:

1. Cultural Learning Environment Questionnaire – (CLEQ : Waldrip & Fisher, 1996)
3. What is Happening in this Classroom – (WIHIC: Fraser, McRobbie & Fisher, 1996)
4. Students Cultural Learning Environment Questionnaire – (SCLEQ : Waldrip & Fisher, 1996)
5. Classroom Environment Questionnaire – (CEQ : Dorman, 1991)
6. Multicultural Classroom Learning Inventory – (MCLEI: Giddings & Waldrip, 1997)

Although six potential instruments were under consideration, they had many common elements. First, many similar scales were investigated by the instruments. Second, a number of common or similar questions were used in different instruments. Third,

each instrument used a common scoring system indicating a range such as Strongly Agree to Strongly Disagree or Almost Always to Almost Never. Table 4.2 outlines the scales investigated by the instruments.

However, despite the range of instruments identified as relevant to this present study, the instruments, Cultural Learning Environment Questionnaire (CLEQ) (Waldrip, 1996) and You and Your Classroom (YYC) (Waldrip, 1996) were deemed most appropriate and relevant for the present. Consequently, a significant number of items for the instrument developed for the present study were from the Cultural Learning Environment Questionnaire (Waldrip, 1996). The specific details of item development are as follows:

1. The Collaboration scale was developed as an amalgam of five items from CLEQ's Collaboration scale and two items from WIHIC's Students Cohesiveness scale.
2. The Competition scale was developed from five items from CLEQ's Competition scale and two items from YYC's Competition scale.
3. The Teacher Authority scale was a combination of five items from CLEQ's Teacher Authority scale and two items from CEQ's Teacher Control scale.
4. The Teacher Support scale was an amalgam of five items from WIHIC's Teacher Support scale and two items from CEQ's Interaction scale.
5. The Deference scale was a combination of five items from CLEQ's Deference scale and two items from YYC's Deference scale.
6. The Gender Equity scale was formed from five items from YYC's Gender Equity scale and two items from WIHIC's Equity scale.
7. The Congruence scale was derived from five items from CLEQ's Congruence scale and a rewording of two scales from SCLEQ's Congruence scale.

8. The Individualisation scale resulted from five items from CEQ's Individualisation scale and a rewording of a further two items from this same scale.

TABLE 4.2
OVERVIEW OF SEVEN INSTRUMENTS FOR ASSESSING MULTICULTURAL CLASSROOM ENVIRONMENTS

Instrument	Items per Scale	Scales Assessed	Reference
Cultural Learning Environment Questionnaire (CLEQ)	5	Collaboration, Competition, Teacher Authority, Congruence, Modelling, Deference	Waldrip, 1996
You and Your Classroom (YYC)	5	Collaboration, Competition, Teacher Authority, Congruence, Modelling, Deference, Gender Equity, Communication Student Cohesiveness,	Waldrip, 1996
What is Happening in this Classroom (WIHIC)	8	Teacher Support, Cooperation, Task Orientation, Involvement, Investigation, Equity	Fraser, McRobbie & Fisher, 1996
Students Cultural Learning Environment Questionnaire (SCLEQ)	5	Collaboration, Competition, Teacher Authority, Communication Student Affiliation, Interactions, Cooperation,	Waldrip & Fisher, 1996
Classroom Environment Questionnaire (CEQ)	9-10	Task orientation, Order & Organisation, Individualisation, Teacher Control	Dorman, 1994
Multicultural Classroom Learning Environment Inventory (MCLEI)	5	Communication, Competition, Authority, Prior Knowledge, Knowledge Transmission, Relevance	Gidding & Waldrip, 1997

4.3.3 Additional Classroom Environment Scales

The eight scales identified in Element 3 of the instrument development and validation procedure were supplemented by an additional scale that investigated the Modelling and Classroom Organisation dimension. The creation of an additional scale was consistent with Element 4 of the instrument development and validation procedure. The additional scale, known as Classroom Operation, was developed by the researcher after a review of existing instruments. Classroom Operation, for the present study, is defined as the extent to which a teacher guides, directs and controls the learning activities in the classroom. The items used for this scale, whilst developed by the researcher, were influenced by CLEQ's Modelling scale. Because the present study was investigating multicultural classroom environments in Queensland Catholic secondary schools, it was deemed important to include the Classroom Operation scale. Cunningham-Florez (2001) asserted that some students from non-English speaking backgrounds come from educational systems where the teacher is viewed as the 'unquestioned expert' and therefore directs all classroom operations. Sangster (2001) also highlighted that some overseas students had different life experiences and exposure to different forms of education. Because the present study was investigating multicultural classroom environments in Queensland Catholic schools it was deemed important to include the Classroom Operation scale to ascertain if such assertions were true in Queensland Catholic secondary schools. A fuller explanation of the scales may be found in Table 4.3.

The pilot nine scale instrument consisted of 63 items with responses recorded on a five point format (0 - Strongly Disagree, 1 - Disagree, 2 – Not Sure, 3 - Agree, 4 - Strongly Agree). Appendix 1 details the Pilot instrument, scale allocation and scoring procedures (see Appendix 1). As shown in Table 4.3, each scale has seven items. Besides the desire to have acceptable internal reliabilities of the scales and the support of the Instrument Development Criteria of Economy, there was no particular reason for the number of items allocated to each of the classroom environment scales.

4.3.4 Field Testing, Refinement and Validation of Multicultural Classroom Environment Instrument

Element 5 of the Instrument Development and Validation Procedure involved the field testing, refinement and validation of the multicultural instrument which was named the Multicultural Classroom Environment Instrument (MCEI) and used in the present study.

The decision was made that the overall design of this study was to have three stages (Section 3.3.1). Stage 1 was to ascertain key aspects of multicultural classroom learning environments from appropriate literature sources and key stakeholders (i.e. students, teachers and parents). Stage 2 was to develop and administer a pilot instrument to be administered to a small sample of students in a Catholic secondary school. Stage 3 involved the administration of the final instrument to students across a range of Queensland Catholic secondary schools. The reason for having three stages was to allow the researcher the opportunity in Stage 2 to examine the suitability of the pilot instrument, and so contribute to the validation of the final research instrument used in Stage 3. By having Stage 2 as a pilot stage, issues of instrument administration, length and suitability could be addressed in preparation for the administration of the final research instrument in Stage 3. Stage 3 provided for the collection of normative data to answer the research questions as identified in Section 1.2.2.

This section of the thesis is divided into three parts. First, an examination of the validation data from the pilot instrument used in Stage 2. Second, the refinement decisions taken to produce the final instrument for Stage 3. Third, an examination of the validation data for the final instrument used in Stage 3.

TABLE 4.3

DESCRIPTION OF SCALES FOR PILOT MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT AND ASSOCIATED INFORMATION

Dimension	Scale Name	Scale Description	Source Of Scale	Number of Items	Moos Schema
Student-Student Relationship	Collaboration	Extent to which students co-operate rather than compete with one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); WIHIC (Fraser, McRobbie & Fisher, 1996)	7	R
Student-Teacher Relationship	Teacher Support	Extent to which teacher helps, befriends, trusts and is interested in students	WIHIC (Fraser, McRobbie & Fisher, 1996)	7	R
Student-Student Competition	Competition	Extent to which students compete against one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	7	P
Teacher Control	Teacher Authority	Extent to which the classroom has rules, how strictly they are enforced and how severely infractions are punished.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	7	S
Knowledge Transmission	Congruence	Extent to which students associate learning in the classroom environment and the home environment.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	7	P
Degree of Compliance	Deference	Extent to which students verse their own opinion or display a desire to comply.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996);	7	S
Individualisation	Individualisation	Extent to which students are allowed to make decisions and are treated differently according to ability, interest, work rate, culture and attitude.	CEQ (Dorman, 1994); CUCEI (Fraser & Treagust, 1986) ICEQU (Fraser, 1990)	7	S
Modelling and Classroom Organisation	Teacher Directedness	Extent to which a teacher guides, directs and controls the learning activities in the classroom.	Researcher, with some influence from CLEQ modeling scale.	7	P
Gender	Gender Equity	Extent to which gender roles are differentiated or overlapping by students.	WIHIC (Fraser, McRobbie, & Fisher, 1996); CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996)	7	R

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

4.3.4.1 *Validation Data – Pilot Study*

The initial field testing of the pilot multicultural classroom environment instrument involved 130 students from a Catholic secondary school. The students volunteered to be part of the study and were considered to be a fair representation of students in Queensland Catholic secondary schools. The results of factor and item analyses, checks on internal consistency and discriminate validity using this sample, are reported in this section.

The first step in the refinement and validation of the pilot multicultural classroom environment instrument, involved a series of exploratory factor analyses whose purpose was to examine the internal structure of the set of 63 items. Principle components analysis with varimax rotation was used to generate orthogonal sets. These factor analyses were considered to be exploratory because of the small sample size of 130 students. The important outcome of the factor analysis was that the data did not support a 9-scale instrument. An 8-scale instrument seemed more appropriate. Although most items were found to have a high correlation with its assigned scale, a number had substantial loadings on other scales.

Table 4.4 lists, for the sample involved in the pilot Multicultural Classroom Environment Instrument, Cronbach's alpha coefficient as an index of internal consistency for each scale with the individual as the unit of analysis. The results in Table 4.4 indicate that, with the exception of Individualisation, reliabilities were quite satisfactory. Table 4.4 also lists the mean correlation of a scale with the remaining 8 scales as an index of discriminate validity (the extent to which a given scale measures a dimension not measured by other scales of the instrument). These indices indicate some overlap among the scales.

TABLE 4.4

INTERNAL CONSISTENCY (ALPHA RELIABILITY) AND DISCRIMINATION VALIDITY
(MEAN CORRELATION WITH OTHER SCALES) FOR THE PILOT CLASSROOM
ENVIRONMENT INSTRUMENT

Scale	Alpha Reliability	Mean Correlation
Collaboration	.62	.19
Competition	.84	.43
Teacher Authority	.66	.22
Teacher Support	.72	.28
Congruence	.71	.27
Deference	.71	.25
Individualisation	.41	.09
Classroom Operation	.46	.10
Gender Equity	.72	.27

4.3.4.2 *Refinement Decisions*

On the basis of these data analyses, the following decisions were made in order to improve the psychometric qualities of the instrument for use in the main study.

1. The Individualisation scale was deleted because of its low reliability.
2. Items 20 and 21 in the Teacher Authority scale were deleted because of their low Corrected Item-Total Correlation.
3. Item 52 in the Classroom Operation scale was deleted because of its low Corrected Item-Total Correlation.
4. Item 34 in the Congruence scale was deleted because of its low Corrected Item-Total Correlation.
5. A number of items were reworded to ensure that the language used was consistent throughout the instrument and could be easily understood by the

students completing the questionnaire. The items reworded were 22, 28, 55, 56, 62, and 63.

6. With the deletion of an entire scale and three other individual items deleted, a decision was made to have an instrument with only eight scales. It was also decided that each scale should have the same number of items. Upon further consideration, a decision was made to have eight items for each of the eight remaining scales. As a result of this decision, each new scale required the addition of one additional item. For the two scales, Teacher Authority and Classroom Operation, the further addition of items that had been deleted was also required. In replacing or adding items to each scale, a decision was made to refer back to the existing instrument from which the scales were chosen and use items from these scales. Alternatively, if deemed necessary, the researcher could combine items from existing instruments to create a new item for this particular study.
7. After careful consideration, a decision was made to change the name of a scale. The scale Classroom Operation was changed to Teacher Directedness. This decision was made because the items used in this scale specifically focused on the role and operation of the teacher, rather than the overall operation of the classroom. The word Directedness was used because the items were designed to examine participant's perception of the level of direction a teacher gives in the classroom learning environment.
8. The front cover of the instrument was also altered slightly so that the demographic information collected may be more easily grouped and analysed.

Thus, the final form of the classroom environment instrument was a 64 item questionnaire with eight scales, whose descriptions and classifications according to Moos' schema are given in Table 4.5. Responses were recorded using a five point format (0 - Strongly Disagree, 1 - Agree, 2 - Not Sure, 3 - Agree, 4 - Strongly Agree). Appendix 2 shows the instrument, scale allocation and scoring procedures (see Appendix 2).

TABLE 4.5

DESCRIPTION OF SCALES FOR FINAL MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT AND ASSOCIATED INFORMATION

Dimension	Scale Name	Scale Description	Source Of Scale	Number of Items	Moos Schema
Student-Student Relationship	Collaboration	Extent to which students co-operate rather than compete with one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); WIHIC (Fraser, McRobbie & Fisher, 1996)	8	R
Student-Teacher Relationship	Teacher Support	Extent to which teacher helps, befriends, trusts and is interested in students	WIHIC (Fraser, McRobbie & Fisher, 1996)	8	R
Student-Student Competition	Competition	Extent to which students compete against one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	P
Teacher Control	Teacher Authority	Extent to which the classroom has rules, how strictly they are enforced and how severely infractions are punished.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	S
Knowledge Transmission	Congruence	Extent to which students associate learning in the classroom environment and the home environment.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	P
Degree of Compliance	Deference	Extent to which students voice their own opinion or display a desire to comply.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996);	8	S
Modelling and Classroom Organisation	Teacher Directedness	Extent to which a teacher guides, directs and controls the learning activities in the classroom.	Researcher, with some influence from CLEQ modeling scale.	8	P
Gender	Gender Equity	Extent to which gender roles are differentiated or overlapping by students.	WIHIC (Fraser, McRobbie, & Fisher, 1996); CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996)	8	R

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

4.3.5 Validation of Classroom Environment Instrument

Validation analyses for the multicultural classroom environment instrument using data from the main study are reported in this section. Item and factor analysis are reported first, followed by statistics on each scale's internal consistency and discriminate validity.

Data collected in the main study involving 1,460 students from 24 schools (see Section 3.3.4) were subjected to factor and item analyses. Principal components factor analysis (with varimax rotation) using the individual as the unit of analyses, extracted eight factors which accounted for 48.144% of the variance (see Table 4.6). Table 4.6 shows that all items had factor loadings of at least 0.4 with their a priori scales. Apart from items 44, 45, 46, 48, 55, 56 and 64, all items had loadings of less than 0.4 with the other scales in the a priori structure. Overall, the factor analysis supported the a priori instrument structure. Item-scale correlations confirmed that all items had been assigned to the appropriate scale, and that each item made an appreciable contribution to that scale.

Estimates of the internal consistency of the eight scales of the classroom environment instrument were calculated using Cronbach's alpha coefficient for the above sample. As the individual mean was used as the unit of analysis when testing hypotheses, it was considered important to report internal consistency of individual mean. Table 4.7 shows the alpha coefficient for each scale of the classroom environment instrument using the individual mean as the unit of statistical analysis. The values of the alpha coefficient in Table 4.7 suggest that each scale of the multicultural classroom environment instrument had acceptable internal consistency for the individual mean unit of analysis. Table 4.7 also lists the mean correlation of a scale with the remaining 7 scales as an index of discriminant validity (the extent to which a given scale measures a dimension not measured by other scales of the instrument). These indices indicate some minor overlapping among the scales. Item-scale correlations confirmed that all items had been assigned to the appropriate scale and that each item made an appreciable contribution to that scale.

TABLE 4.6

EXPLORATORY FACTOR ANALYSIS RESULTS FOR EIGHT-FACTOR VARIMAX ROTATION FOR THE MAIN MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT (N = 1460)

Item Number	Teacher Support	Competition	Teacher Authority	Congruence	Collaboration	Gender Equity	Deference	Teacher Directedness
1					.797			
2					.431			
3					.569			
4					.474			
5					.754			
6					.409			
7								
8					.793			
9		.695						
10		.755						
11		.682						
12		.709						
13		.779						
14		.722						
15		.443						
16		.711						
17			.629					
18			.757					
19			.732					
20			.605					
21			.643					
22			.752					
23			.790					
24			.728					
25	.576							
26	.692							
27	.543							
28	.673							
29	.604							
30	.546							
31								
32	.635							
33				.552				
34				.625				
35				.700				
36				.681				
37				.672				
38				.684				
39				.493				
40				.599				

41						.720	
42						.484	
43						.755	
44		.443				.450	
45		.484				.455	
46				.513			
47							
48		.548					
49							.495
50							.401
51							.647
52							.625
53							.524
54							
55					.416		
56	.545						
57						.710	
58						.765	
59						.722	
60						.708	
61						.627	
62							
63						.400	
64							

Factor loadings smaller than 0.40 have been omitted

TABLE 4.7

INTERNAL CONSISTENCY (ALPHA RELIABILITY) AND DOCUMENT VALIDITY (MEAN CORRELATION WITH OTHER SCALES) FOR THE FINAL MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT.

Scale	Alpha Reliability	Mean Correlation
Collaboration	.76	.36
Competition	.87	.46
Teacher Authority	.84	.42
Teacher Support	.80	.40
Congruence	.84	.42
Deference	.71	.28
Classroom Directedness	.63	.23
Gender Equity	.81	.40

4.4 CHAPTER SUMMARY

This chapter has detailed the specific steps involved in the development of an instrument to assess multicultural classroom environments in Queensland Catholic secondary schools. Instrument Development Criteria adopted for this study were introduced in Section 4.2.1. A five-Element Instrument Development and Validation Procedure which operationalised these criteria was introduced, discussed and justified as an appropriate framework for the development of these instruments (Section 4.2.2). This procedure began with the review of learning environment, multicultural and Catholic school literature (see Chapter 2) and the perceptions of stakeholders obtained by a researcher. Dimensions of the classroom environments of a typical Catholic secondary school were identified (see Sections 4.3.2).

For the pilot multicultural classroom environment instrument, an additional scale (Classroom Operation) was added to the eight scales identified from the various existing classroom environment instruments. The result was the creation of an instrument which was called the Multicultural Classroom Environment Instrument (MCEI). The pilot instrument consisted of nine scales and 63 items and was administered to 130 students. Based on the trial data, refinement and validation procedures led to an eight scale instrument of 64 items which assessed Collaboration, Teacher Support, Gender Equity (Relationship Dimension), Competition, Congruence, Teacher Directedness (Personal Development Dimension), Teacher Authority and Deference (System Maintenance and System Change Dimension). Several established classroom environment instruments (*viz.* CLEQ, YYC, SCLEQ, MCLEI and CEQ) were used as sources for the individual items. The items for Teacher Directedness were largely developed by the researcher. The final version of the Multicultural Classroom Environment Instrument (MCEI), consisted of 8 scales with 64 items and was administered to 1,460 students in 24 Catholic secondary schools in Queensland.

Factor and item analyses conducted on the data collected in the main study supported the eight scale structure of this classroom environment instrument. Internal

consistency reliability and discriminate validity indices indicated the scales to be generally reliable and reasonably distinct.

The final form of the Multicultural Classroom Environment Instrument (MCEI) had eight scales with scoring based on a Strongly Agree, Agree, Not Sure, Disagree and Strongly Disagree response format. The instrument met the four development criteria outlined in Section 4.2.1: Consistency with literature; Coverage of Moos' 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 Multicultural Classroom Environment Instrument (MCEI) and provides a basis for subsequent data analyses as reported in Chapter 5 of this thesis. The development of the Multicultural Classroom Environment Instrument (MCEI) will be useful to other researchers, administrators and teachers interested in the assessment of multicultural classroom learning environments in Catholic secondary schools.

CHAPTER 5

RESULTS OF DATA ANALYSIS

5.1 INTRODUCTION

Data reported in the previous chapter attest to the validity of the Multicultural Classroom Environment Instrument (MCEI) developed in this study. The purpose of the present chapter is to report on the use of this instrument in a sample of Queensland Catholic secondary schools to facilitate the answering of Research Questions 1 to 8 (see Section 1.2.2) pertaining to the determinants of the classroom environment. Classroom environment data were collected from 1,460 students from 24 Catholic secondary schools. Details on the specific nature of the sample are given in Chapter 3 of this thesis (see Section 3.3.4).

The research design of this study involved the use of classroom environment scales as dependent variables with school type, year level, subject, student gender, country of birth of student, country of birth of father, and country of birth of mother as independent variables. As discussed in Section 3.3.3, it should be noted that there were three school types (Coeducational, Boys', Girls'), three year levels (Years 8, 10 and 12), two subjects (Religion and Study of Religion) and eight countries of birth (Asia, Spanish Speaking, Pacific Islands, Europe, USA/Canada, Britain/New Zealand, Africa and Australia).

The data analysis procedures used to compare individual means was multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA), as well as a variety of non-parametric analyses. In general, the significance level adopted for these inferential tests of significance was 0.05 or 0.001. Provided that the overall multivariate test was significant, univariate *F* tests were used for individual scales. This approach reduced the overall Type 1 error rate that would have been associated with performing a series of univariate tests at the outset.

When appropriate, an effect size is reported. Effect size refers to the extent to which the groups in the population differ on the dependent variable (Stevens, 1992). The difference between the means as a fraction of the full sample standard deviation was used as a convenient index. Graphs of the sample data illustrate the results.

A number of non-parametric tests were carried out on some of the data because some of the assumptions required for inferential tests were not satisfied by some of the data. This aspect of the data analysis will be examined in more detail in Section 5.3.2.

5.2 RESEARCH QUESTIONS ANSWERED IN THIS CHAPTER

There are eight Research Questions answered in this chapter. They are:

1. What are the key characteristics of multicultural classroom environments in Catholic schools?
2. To what extent do Catholic secondary school students from different cultures differ in their perceptions of their classroom environment?
3. To what extent do multicultural classroom environments in different types of Catholic schools (i.e. Boys', Girls' and Coeducational) differ?
4. To what extent do multicultural classroom environments of Religion and Study of Religion classes in Catholic schools differ?
5. To what extent are the differences between multicultural classroom environments in Religion and Study of Religion classes similar for Boys', Girls' and Coeducational Catholic schools?
6. To what extent do multicultural classroom environments of Years 8, 10 and 12 classes in Catholic schools differ?
7. To what extent are the differences between multicultural classroom environments in Years 8, 10 and 12 classes similar for the Boys', Girls' and Coeducational Catholic schools?
8. To what extent do multicultural classroom environments in Catholic schools differ for male and female students?

It is important to note that, because of the general nature of Questions 2, 7 and 8, more specific sub-questions were formulated prior to hypothesis testing. Thus Question 2 investigated three specific sub-questions:

- Question 2.1 To what extent do Catholic secondary school students who are themselves from different cultures differ in their perceptions of their classroom environment?
- Question 2.2 To what extent do Catholic secondary school students whose fathers are from different cultures differ in their perceptions of their classroom environment?
- Question 2.3 To what extent do Catholic secondary school students whose mothers are from different cultures differ in their perceptions of their classroom environment?

Similarly, Question 7 had three associated sub-questions:

- Question 7.1 For Coeducational schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?
- Question 7.2 For Boys' schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?
- Question 7.3 For Girls' schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?

Similarly, Question 8 had three associated sub-questions:

- Question 8.1 For Coeducational schools, to what extent do multicultural classroom environments differ for male and female students?

Question 8.2 For single sex schools, to what extent do multicultural classroom environments differ for male and female students?

Question 8.3 Irrespective of school type, to what extent do multicultural classroom environments differ for male and female students?

5.3 ANALYSIS OF CLASSROOM ENVIRONMENT DATA

This section reports answers to the Research Questions as outlined in Sections 1.2.2 and 5.2. The research questions are used to organize the various sub-sections.

The sample of 1,460 students from 24 Catholic secondary schools responded to the Multicultural Classroom Environment Instrument (MCEI) which was designed for the present study. These students studied either Religion or Study of Religion and were in either Years 8, 10 or 12. As the individual mean was the unit of analysis for this component of the study, the student raw data was a set of 11,680 means (1,460 means x 8 scales).

5.3.1 Key Characteristics of Multicultural Classroom Environment.

Question 1. *What are the key characteristics of multicultural classroom environments in Catholic schools?*

An examination of the key characteristics of multicultural classroom environment in Catholic schools is best done by revisiting aspects of the development of the Classroom Instrument used for the present study.

Section 4.2.1 outlined the four Instrument Development Criteria that were employed for the present study: Consistency with literature; Coverage of Moos' three General Dimensions; Salience to stakeholders; and Economy. Similarly, Section 4.2.2 outlined

the five-Elements Instrument Development and Validation Procedure (see Figure 4.1). By employing this instrument development and validation procedure, and aligning it with the four instrument development criteria, a classroom environment instrument known as the Multicultural Classroom Environment Instrument (MCEI) was developed. This instrument was a 64 item instrument which investigated students' perceptions of eight classroom environment scales (See Appendix 11). The scales identified as key characteristics of multicultural classroom environments in Catholic secondary schools were: Collaboration; Competition; Teacher Authority; Teacher Support; Congruence; Deference; Teacher Directedness; and Gender Equity. A description of each scale is outlined in Table 5.1 along with the source of the scale, the number of items and its relationship to Moos' schema.

5.3.2 Classroom Environment for Different Cultural Groups.

Question 2 *To what extent do Catholic secondary school students from different cultures differ in their perceptions of their classroom environment?*

The data collected from the research instrument for this research question identified the country of birth of the student, their father and their mother. From the 1,460 respondents to the instrument, eight (8) country of birth groupings were identified for the student, their father and their mother. The creation of the eight particular country of birth groupings was not a random selection, but rather was based on a number of criteria. First, the groupings were created to give a significant cross section of regions from which further analysis could take place. Second, the creation of eight countries of birth groupings was to satisfy certain statistical assumptions. In isolation, the number of students from some of the individual countries was too small to satisfy certain assumptions for the statistical analysis used. Third, to group similar countries together based on geographical proximity: USA and Canada, the Pacific Islands, Europe and Asia.

TABLE 5.1

DESCRIPTION OF SCALES FOR THE FINAL MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT AND ASSOCIATED INFORMATION

Dimension	Scale Name	Scale Description	Source Of Scale	Number of Items	Moos Schema
Student-Student Relationship	Collaboration	Extent to which students co-operate rather than compete with one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); WIHIC (Fraser, McRobbie & Fisher, 1996)	8	R
Student-Teacher Relationship	Teacher Support	Extent to which teacher helps, befriends, trusts and is interested in students	WIHIC (Fraser, McRobbie & Fisher, 1996)	8	R
Student-Student Competition	Competition	Extent to which students compete against one another	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	P
Teacher Control	Teacher Authority	Extent to which the classroom has rules, how strictly they are enforced and how severely infractions are punished.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	S
Knowledge Transmission	Congruence	Extent to which students associate learning in the classroom environment and the home environment.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996); MCLEI (Giddings & Waldrip, 1997)	8	P
Degree of Compliance	Deference	Extent to which students voice their own opinion or display a desire to comply.	CLEQ (Waldrip, 1996); YYC (Waldrip, 1996);	8	S
Modelling and Classroom Organisation	Teacher Directedness	Extent to which a teacher guides, directs and controls the learning activities in the classroom.	Researcher, with some influence from CLEQ modeling scale.	8	P
Gender	Gender Equity	Extent to which gender roles are differentiated or overlapping by students.	WIHIC (Fraser, McRobbie, & Fisher, 1996); CLEQ (Waldrip, 1996); YYC (Waldrip, 1996); SCLEQ (Waldrip & Fisher, 1996)	8	R

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

Fourth, countries where Spanish was the primary language were grouped because of a common language parameter. The groupings, based on either geography or language parameters, were seen as appropriate. Finally, it was necessary to have only eight groups to satisfy certain statistical requirements. Consequently, Britain and New Zealand were grouped together because they were both only small groups. Although there is only limited perceived association between the two countries it was felt that there would be some ancestral connection, particularly with the country of birth of father and mother. As a result eight country of birth groupings were created: Australia; Asia; Pacific Islands; USA/Canada; Spanish Speaking; Africa; Britain/New Zealand; and Europe.

However, the establishment of these eight country of birth groupings created disparity in group size. Some group sizes (e.g. Australia) were very large, whilst others (e.g. Africa) were very small. With this large disparity in group size, an important assumption of ANOVA, namely the normality of each of the sample sub-groups, was violated. Consequently, the inferential tests of ANOVA and MANOVA cannot be used to analyse the data for this research question.

Because the assumptions of the ANOVA were violated for the data investigated with this research question, it was necessary to consider the use of non-parametric procedures to investigate the significance of the differences between the various country of birth groupings. Non-parametric tests are so named because they neither make assumptions about the parameters (such as the mean and variance) of the distribution, nor do they assume that any particular distribution is being used. These conditions are satisfied by the data and hence non-parametric tests were employed for this research question.

The non-parametric test employed to analyse the data for this research question was the Kruskal-Wallis H Test. This test is a non-parametric, one way analysis of variance by ranks for ordinal data for three or more samples. In order for this test to be valid each sample size should be greater than or equal to 5, although the samples do not need to be equal. This sample size validity criterion was satisfied by the data in this research question. The Kruskal-Wallis H test does not indicate how the various samples are different, only that some difference is present. If a significant difference

is indicated, then it is possible to investigate where this difference exists by employing another non-parametric test known as the Mann-Whitney U Test. The Mann-Whitney U test was used in the analysis of data for this research question using the Two Independent Samples Test procedure for pair wise group comparisons.

A further issue to note with the analysis of data for this research question is that because data regarding the country of birth was sought about students, their father and their mother, it was necessary to examine the analysis of each data set independently. Consequently this research question had three sub-questions. The first sub-question investigated differences in students' perceptions for the student's country of birth. The second sub-question investigated the students' perceptions grouped by their father's country of birth. Similarly, the third sub-question investigated the students' perceptions grouped by their mother's country of birth. These three sub-questions will be examined in Section 5.3.2.1, 5.3.2.2 and 5.3.2.3 respectively.

5.3.2.1 *Classroom Environment for Different Student's Country of Birth*

Question 2.1 *To what extent do Catholic secondary school students who are themselves from different cultures differ in their perceptions of their classroom environment?*

Analyses of the data for student's country of birth using the Krushal-Wallis H test, revealed that significant differences existed for the scales of Collaboration, Competition, Congruence and Deference at $H = \chi^2 (7, N = 1460)$ at $p < 0.05$. The level of significance was Collaboration ($H(7, 1460) = 0.02$); Competition ($H(7, 1460) = 0.17$); Congruence ($H(7, 1460) = 0.028$); and Deference ($H(7, 1460) = 0.10$) at $p < 0.05$. Mann-Whitney U tests revealed a number of significant differences between different student's country of birth for the above scales.

Sample scale means for each student's country of birth are graphed in Figure 5.1 and indicate the following information. For Collaboration, analyses revealed that students born in USA/Canada, in general, perceived significantly greater levels of

collaboration in their classroom environments than students born in Africa, Australia or Spanish speaking countries. The effect sizes were 0.86, 0.68 and 0.74 respectively. The highest level of Collaboration was recorded in the USA/Canada group with the lowest level perceived by the African group with the effect size of 0.68. In general, students born in Africa perceived a significantly higher level of Competition in their classroom environment than students born in the Pacific Islands, Europe and Australia. The respective effect sizes were 0.91, 0.67 and 0.61. The lowest perception of Competition was recorded by the Pacific Island group, whereas the highest level was perceived by the African group with the effect size 0.91.

In general, students born in USA/Canada perceived a higher level of Congruence than students born in Australia, Africa, Asia or Spanish speaking countries. The effect sizes were 0.73, 0.60, 0.58 and 0.66 respectively. USA/Canada had the highest level of Congruence, with the Australian student group the lowest level with the effect size being 0.73. For the Deference scale, in general, students born in the Britain/New Zealand group perceived a higher level of Deference than students born in the Pacific Islands, Africa, Europe or Australia. The effect sizes were 1.02, 0.61, 0.45 and 0.34 respectively. Also students born in Asia perceived a significantly higher level of Deference than students born in the Pacific Islands or Africa. The respective effect sizes were 0.68 and 0.25. Overall the highest perception of Deference was from students born in Britain/New Zealand, with the lowest from students born in the Pacific Island with the effect size being 1.02.

5.3.2.2 *Classroom Environment for Different Father's Country of Birth*

Question 2.2 *To what extent do Catholic secondary school students whose fathers are from different cultures differ in their perceptions of their classroom environment?*

Analysis of the data for father's country of birth using the Kruskal-Wallis H test revealed that significant differences existed for the scales of Collaboration, Deference,

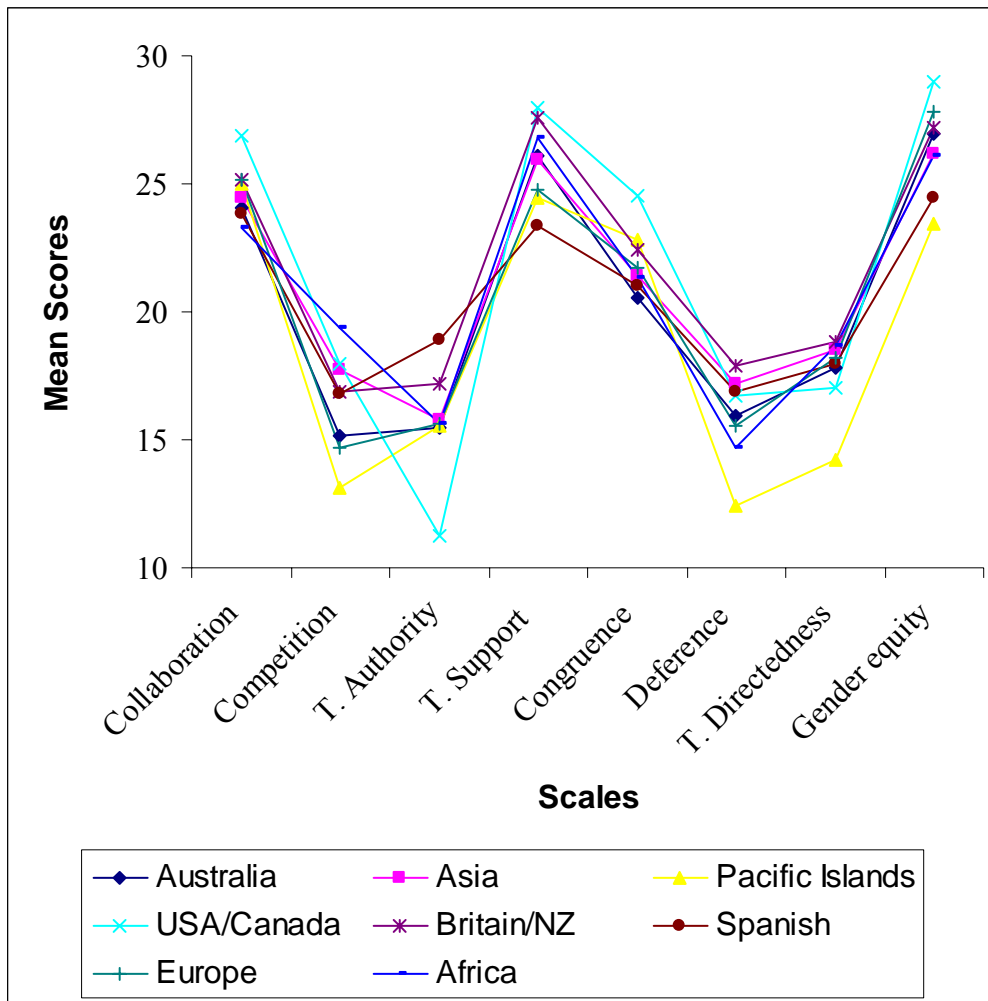


Figure 5.1
Sample Means for each Student's Country of Birth

Teacher Directedness and Gender Equity $H = \chi^2 (7, N = 1460)$ at $p < 0.05$. The level of significance was Collaboration ($H(7, 1460) = 0.015$); Deference ($H(7, 1460) = 0.018$); Gender Equity ($H(7, 1460) = 0.050$) at $p < 0.05$. Mann-Whitney U tests revealed a number of significant differences in scale scores between students who were grouped according to the country of birth of their father.

Sample scale means for each father's country of birth are graphed in Figure 5.2 and indicate the following information. For Collaboration, analysis revealed that, in general, students whose father was born in the Pacific Islands had a significantly higher perception of Collaboration in their classroom environment than students

whose father was born in Australia. The effect size was 0.47. Similarly, students whose father was born in Asia perceived a higher level of Collaboration than students whose father was born in Australia. The effect size was 0.25. The highest level of Collaboration was perceived by the students whose father was born in the Pacific Islands, with the lowest level perceived by the students whose father was born in Australia.

In general, students whose father was born in Africa had a lower perception of Deference in their classroom environment than students whose father was born in Pacific Islands, Asia, Britain/New Zealand, Australia or Spanish Speaking countries. The respective effect sizes were 0.65, 0.56, 0.44, 0.38 and 0.32. The highest level of Deference was with the Pacific Island group, with the African group having the lowest level. The effect size was 0.64. In general, students whose father was born in Asia had a significantly higher perception of Teacher Directedness in their classroom environment than students whose father was born in USA/Canada, Europe, Africa, Australia or Britain/New Zealand. The effect sizes were 0.53, 0.42, 0.39, 0.33 and 0.38 respectively. The highest level of Teacher Directedness was found with the students whose father was born in Asia with the students whose father was born in USA/Canada showing the lowest level with an effect size was 0.53.

A number of significant differences between father's country of birth were identified for the Gender Equity scale. Firstly, students whose father was born in USA/Canada, in general, perceived a higher level of Gender Equity in their classroom environment than students whose father was born in Africa, Pacific Islands or Spanish speaking countries. The respective effect sizes were 0.82, 0.45 and 0.58. Alternatively, students whose father was born in Africa perceived a lower level of Gender Equity than students whose father was born in USA/Canada, Australia, Asia, Britain/New Zealand or Europe. The effect sizes were 0.82, 0.58, 0.52, 0.25 and 0.24 respectively. The final significant difference with the Gender Equity scale was that students whose father was born in Spanish Speaking countries had a significantly lower perception of Gender Equity than students whose father was born in USA/Canada or Britain/New Zealand. The effect sizes were 0.58 and 0.49 respectively. The highest perception of Gender Equity was recorded by the USA/Canada group with the lowest level recorded by the African group with an effect size of 0.82.

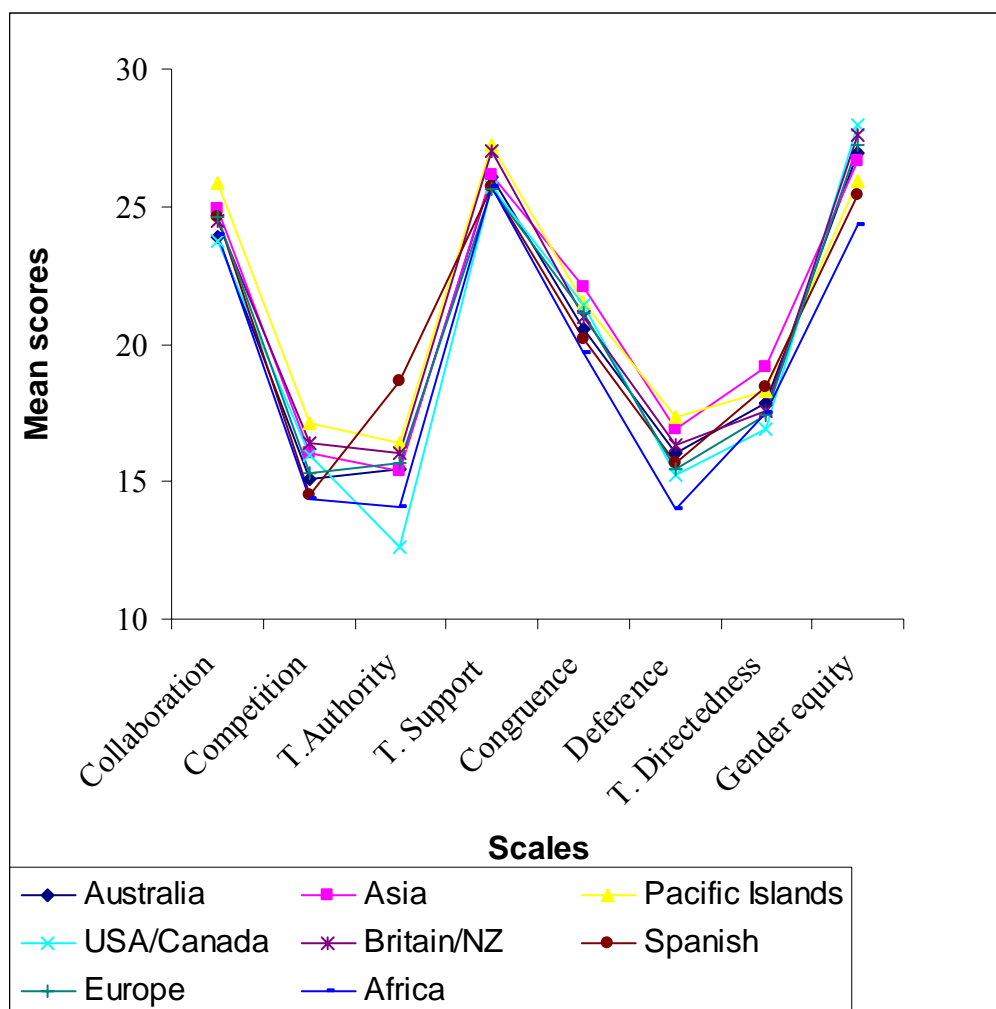


Figure 5.2
Sample Means for each Father's Country of Birth

5.3.2.3 *Classroom environment for Different Mother's Country of Origin.*

Question 2.3 *To what extent do Catholic secondary school students whose mothers are from different cultures differ in their perceptions of their classroom environment?*

Analyses of the data for mother's country of birth using the Kruskal-Wallis H test revealed that significant differences existed for the scales of Collaboration, Competition and Teacher Authority at $H = \chi^2 (7, N = 1460) p < 0.05$. The level of

significance was Collaboration ($H(7, 1460) = 0.032$); Competition ($H(7, 1460) = 0.017$); Teacher Authority ($H(7, 1460) = 0.008$) at $p < 0.05$. Mann-Whitney U test revealed a number of significant differences in the scale scores between students who were grouped according to the country of origin of their mother.

Sample scale means for each mother's country of birth are graphed in Figure 5.3 and indicate the following information. First, analysis revealed that, in general, students whose mother was born in the Pacific Islands had a significantly higher perception of Collaboration in their classroom environment than students whose mother was born in Australia or USA/Canada. The effect sizes were 0.36 and 0.56 respectively. Similarly students whose mother was born in Europe had a significantly higher perception of Collaboration than students whose mother was born in Australia or USA/Canada. The respective effect sizes were 0.23 and 0.44. The highest level of Collaboration was from students whose mother was born in the Pacific Islands with the lowest level in the student whose mother was born in USA/Canada. The effect size was 0.56.

A number of significant differences between mother's country of birth were identified for the Teacher Authority scale. First, students whose mother was born in USA/Canada, in general, had a significantly lower perception of Teacher Authority in their classroom environment than students whose mother was born in Spanish Speaking countries, Britain/New Zealand or Europe. The effect sizes were 0.98, 0.86 and 0.88 respectively. Alternatively students whose mother was born in Europe had a significantly higher perception of Teacher Authority in their classroom environment than students whose mother was born in Asia or Australia. The respective effect sizes were 0.34 and 0.31. Finally students whose mother was born in Britain/New Zealand, in general, had a significantly higher perception of Teacher Authority than students whose mother was born in Asia, Australia or USA/Canada. The effect sizes were 0.32, 0.31 and 0.86 respectively. The highest perception of Teacher Authority was recorded by the Spanish speaking group whilst the lowest was with the USA/Canada group with an effect size of 0.98.

In examining the Competition scale, analysis revealed that, in general, students whose mother was born in Asia had significantly higher levels of Competition in their classroom environment than students whose mother was born in Australia or

USA/Canada. The respective effect sizes were 0.20 and 0.42. Similarly, students whose mother was born in a Spanish Speaking country had a significantly higher perception of Competition in their classroom environment than students whose mother was born in either Australia or USA/Canada. The effect sizes were 0.42 and 0.65 respectively. The mother's country of birth grouping with the highest level of perceived Competition was the Spanish Speaking group, whilst the USA/Canada group had the lowest with an effect size of 0.65.

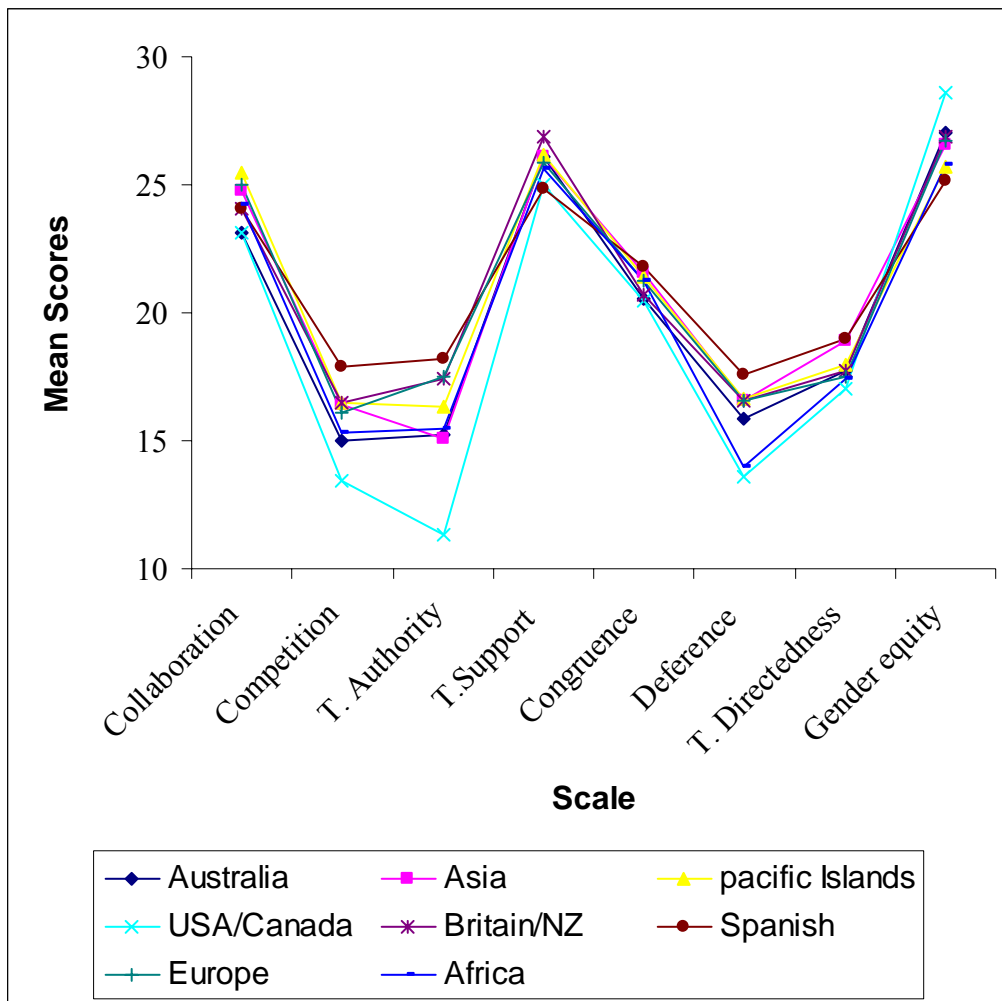


Figure 5.3
Sample Means for each Mother's Country of Birth

5.3.3 Classroom Environment in Different School Type

Question 3 *To what extent Do Multicultural Classroom Environments in different types of Catholic schools (i.e. Boys', Girls' and Coeducational) differ?*

A MANOVA with the set of classroom environment scales as the dependent variables and school type as the grouping variable was significant ($p < .001$). Univariate F tests investigating the effects of school type revealed that the three school types differed significantly on Collaboration [$F(2,1164) = 20.83$]; Competition [$F(2,1164) = 17.75$]; Teacher Authority [$F(2,1164) = 4.24$]; Teacher Support [$F(2,1164) = 4.319$]; Teacher Directedness [$F(2,1164) = 4.12$]; and Gender Equity [$F(2,1164) = 5.17$]. Tukey's *HSD* post-hoc procedure showed a significant difference between Coeducational and Boys', Coeducational and Girls', Boys' and Girls' schools for the Collaboration scale. Coeducational schools, in general, had a higher level of Collaboration than Boys' schools but less Collaboration than Girls' schools. Girls' schools demonstrated a higher level of Collaboration than Boys' schools. The effect sizes were 0.12, 0.17 and 0.29 respectively. For the Competition scale, Boys' schools were, in general, perceived to have higher levels of Competition than both Coeducational and Girls' schools. The effect sizes were 0.31 and 0.40 respectively.

Figure 5.4 illustrates the mean scores for each school type for each of the eight classroom environment scales and shows a range of results. For the Teacher Authority scale, Boys' schools, in general, scored higher than Girls' schools. The effect size was 0.26. For the Teacher Support scale, Coeducational schools scored higher than Boys' schools. The effect size was 0.23. Similarly, for the same scale, Girls' schools, in general, scored higher than Boys' schools. The effect size was 0.14. For the Teacher Directedness scale, Coeducational schools scored higher than Girls' schools. The effect size was 0.17. For the Gender Equity scale, Girls' schools, in general, scored higher than Boys' schools. The effect size was 0.24. For each of the significant classroom environment scales quoted above the effect sizes are relatively small. For the other scales, namely Congruence and Deference, there seemed to be little difference between the different school types.

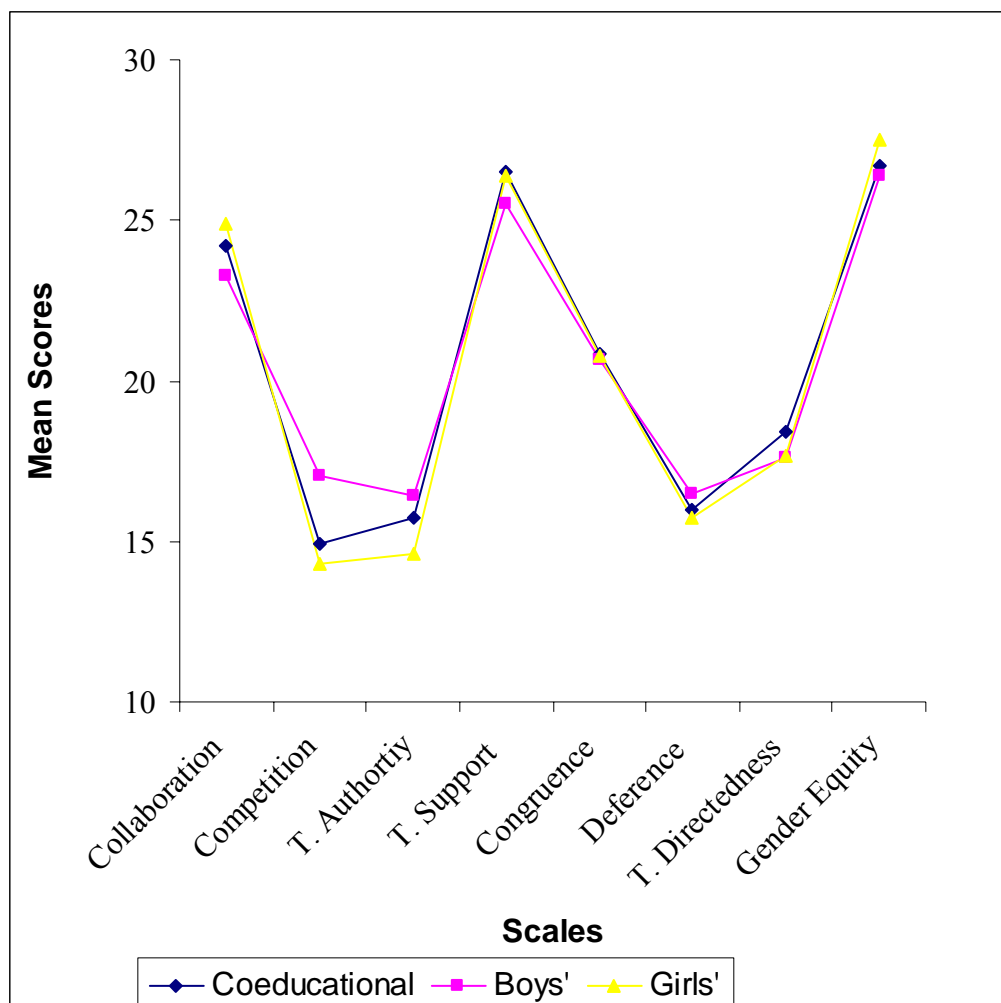


Figure 5.4
Mean Scores for each School Type for each Classroom Scale

5.3.4 Classroom Environment in Different Subjects

Question 4 *To what extent do Multicultural Classroom Environments of Religion and Study of Religion classes in Catholic schools differ?*

It must be noted that Study of Religion is taught only in Years 11 and 12, therefore the investigation of this research question was based on data from Year 12 students only. Accordingly for Year 12 students only, a one-way ANOVA for Subject (Religion, Study of Religion) was conducted. For the effect of subject, univariate F tests revealed that Gender Equity [$F(1,314 = 9.09)$ at ($p < 0.05$) was the only scale for

which there was statistically significant difference between Year 12 Religion and Study of Religion classes. The effect size for this result was 0.33. Figure 5.5 shows the small differences between the mean scores for Religion and Study of Religion classes for each of the classroom environment scales. It reveals that in general, Gender Equity in Religion classes was, in general, less than in Study of Religion classes. For the scales Collaboration, Competition, Teacher Authority, Teacher Support, Congruence, Deference and Teacher Directedness there was no significant differences noted. The effect sizes were 0.03, 0.09, 0.15, 0.07, 0.07, 0.002 and 0.10 respectively.

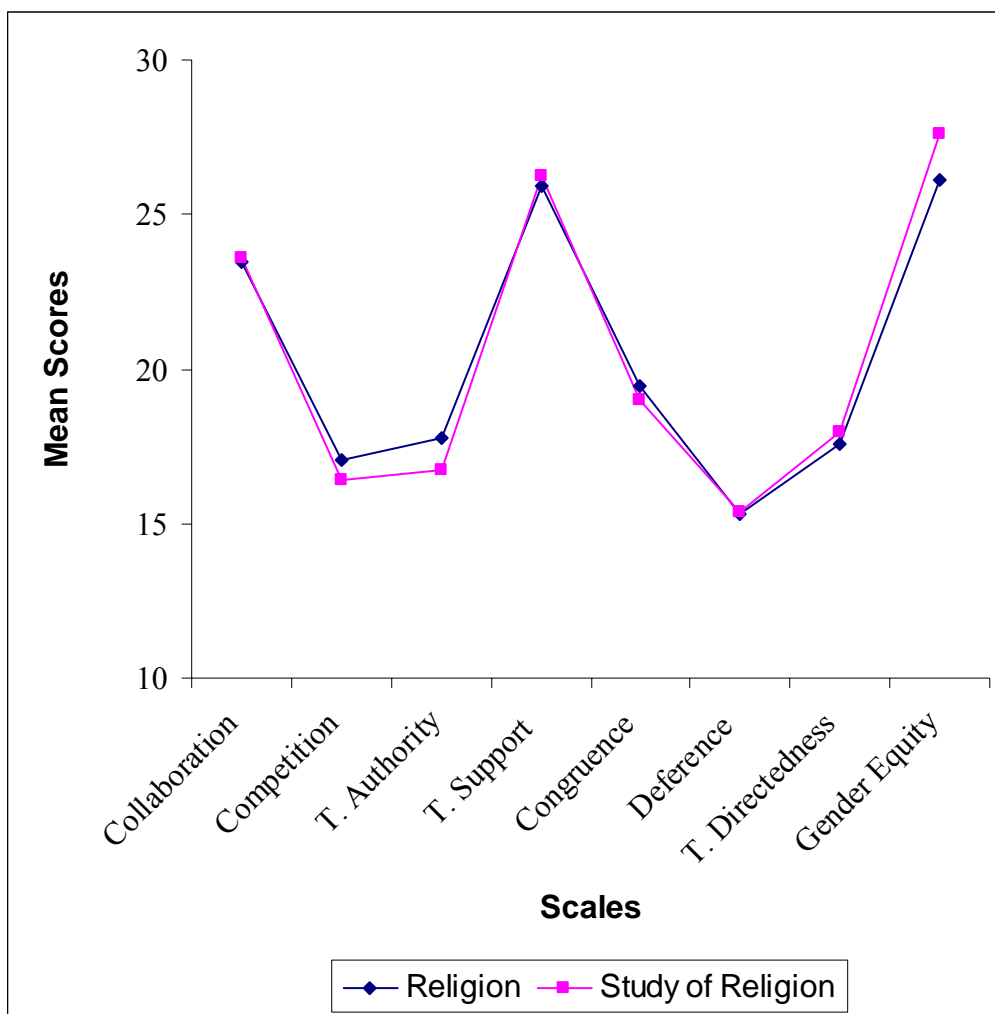


Figure 5.5

Mean Scores for Religion and Study of Religion for each Classroom Scale

5.3.5 Classroom Environment in Different Subjects and Different School Types

Question 5 *To what extent are differences between Multicultural Classroom Environments in Religion and Study of Religion similar for Boys', Girls' and Coeducational Catholic schools?*

Again it must be noted that Study of Religion is taught only in Years 11 and 12, therefore the investigation of this research question was based on data from Year 12 students only in each of the three types of schools (Coeducational, Boys', Girls').

To probe this, a two-way MANOVA with the set of eight classroom scales as dependent variables with school type and subject as independent variables was performed on the Year 12 data set. A two-way MANOVA was conducted to check on possible interaction effects. The school type by subject type interaction was not significant in the multivariate test.

School type and subject type were not found to be significant ($p < 0.05$). Therefore it can be interpreted that no significant differences occurred between the different subject types within any of the three school types investigated (Coeducational, Boys' and Girls').

Figure 5.6 graphs the Year 12 Religion scale means across each of the different school types for each of the classroom environment scales, and reveals that Boys' schools showed the highest levels of Competition and Teacher Authority and the lowest levels of Collaboration. It also showed that students in Coeducational schools perceived the highest amount of Gender Equity, whilst Girls' schools showed the highest level of Collaboration and lowest level of Competition in their classrooms. Figure 5.7 graphs the Year 12 Study of Religion scale means across the different school types for each of the classroom environment scales, and reveals that students in Boys' schools perceived the highest levels of Competition and Teacher Authority and the lowest levels for Collaboration, Teacher Support and Congruence. Students in Coeducational schools perceived the highest levels of teacher Support whilst the Girls' schools

showed the highest levels of Collaboration and Gender Equity and the lowest levels for Teacher Authority.

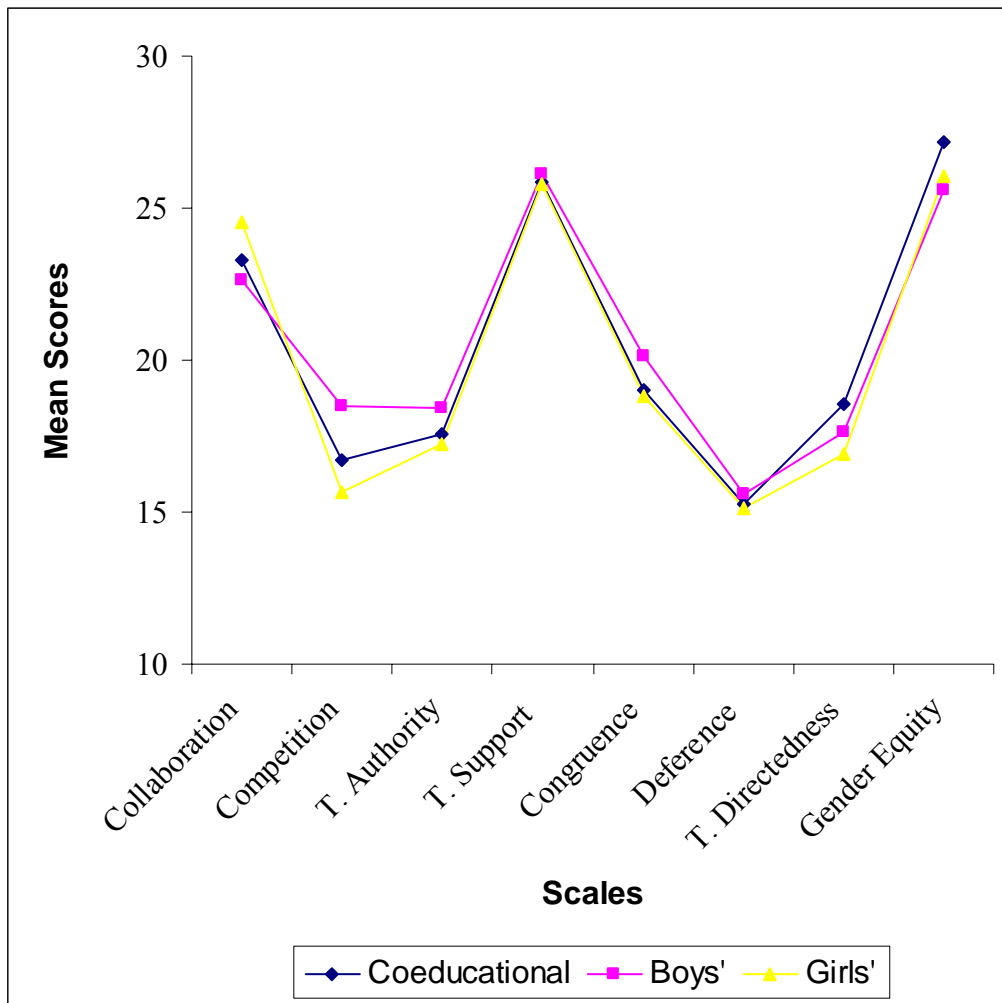


Figure 5.6
Mean Scores for Religion for Different School Types for each Classroom Scale

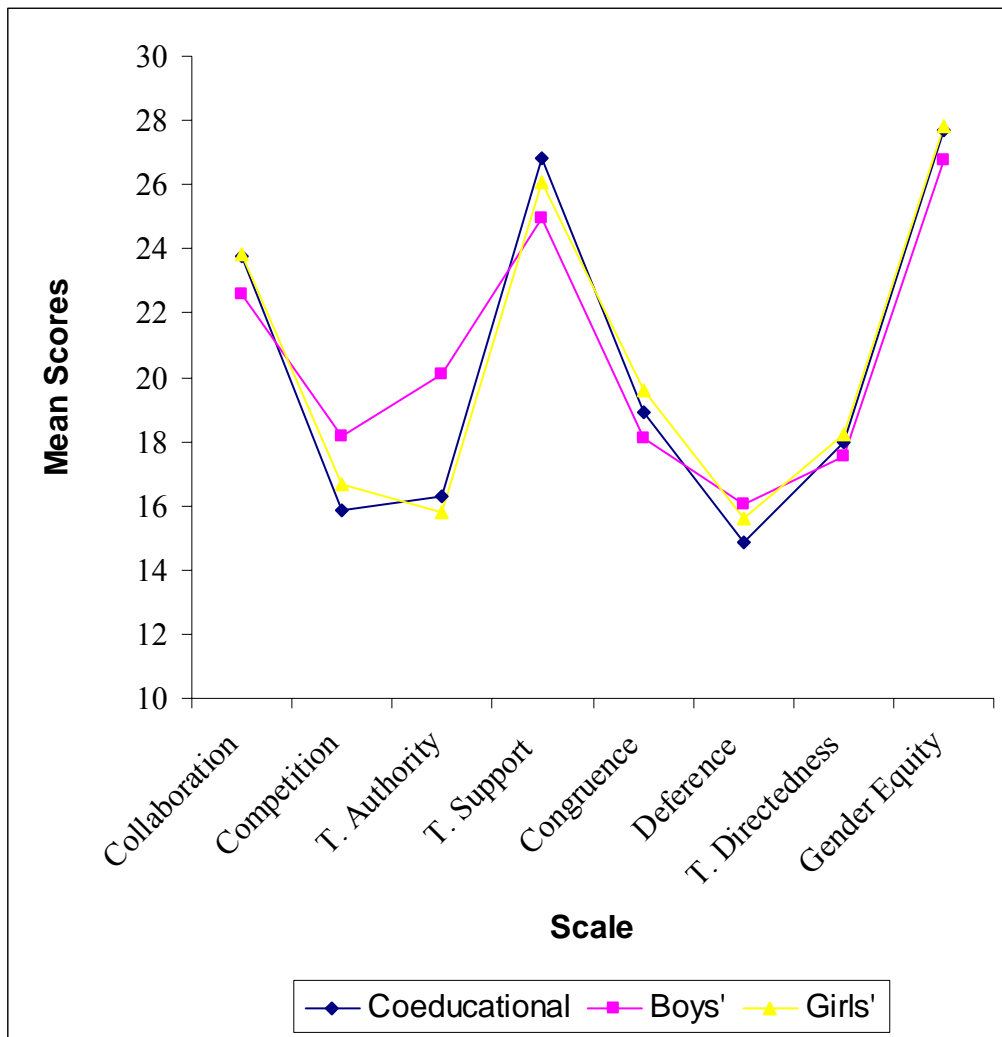


Figure 5.7

Mean Scores for Study of Religion for Different School Types for each Classroom Scale

Table 5.2 details the effect sizes for each scale for Religion within each of the school types. Table 5.3 details the effect sizes for each scale for Study of Religion within each of the school types.

TABLE 5.2
EFFECT SIZES FOR EACH CLASSROOM SCALE FOR RELIGION WITHIN EACH SCHOOL
TYPE

Scale	Coeducational – Boys'	Coeducational – Girls'	Boys' – Girls'
Collaboration	0.16	0.29	0.46
Competition	0.26	0.15	0.41
Teacher Authority	0.11	0.04	0.16
Teacher Support	0.06	0.02	0.08
Congruence	0.21	0.03	0.24
Deference	0.06	0.02	0.08
Teacher Directedness	0.21	0.38	0.17
Gender Equity	0.36	0.25	0.10

TABLE 5.3
EFFECT SIZES FOR EACH CLASSROOM SCALE FOR STUDY OF RELIGION WITHIN EACH
SCHOOL TYPE

Scale	Coeducational – Boys'	Coeducational – Girls'	Boys' – Girls'
Collaboration	0.27	0.02	0.9
Competition	0.37	0.16	0.22
Teacher Authority	0.53	0.07	0.61
Teacher Support	0.43	0.16	0.27
Congruence	0.14	0.13	0.27
Deference	0.22	0.13	0.08
Teacher Directedness	0.11	0.05	0.11
Gender Equity	0.21	0.03	0.24

5.3.6 Classroom Environment in Different Year Level

Question 6 *To what extent do Multicultural Classroom Environments of Years 8, 10 and 12 classes in Catholic schools differ?*

Univariate F tests indicated differences ($p < .05$) between the year levels on all eight scales: Collaboration [$F(2,1173) = 11.77$]; Competition [$F(2,1173) = 11.77$], Teacher Authority [$F(2,1173) = 43.47$]; Teacher Support [$F(2,1173) = 4.27$]; Congruence [$F(2,1173) = 55.92$]; Teacher Directedness [$F(2,1173) = 2.81$]; and Gender Equity [$F(2,1173) = 4.55$]. Tukey's post-hoc procedure showed a significant difference between the different year levels across a number of classroom environment scales. The results of each year level and the classroom environment scale means are graphed in Figure 5.8 and reveal the following results. Compared to Year 10 students, Year 8 students, in general, perceived their classrooms to have greater Collaboration, Teacher Support, Congruence, Deference, Teacher Directedness and Gender Equity, but less Competition and Teacher Authority. The effect sizes for these comparisons were 0.23, 0.21, 0.54, 0.20, 0.23, 0.17, 0.15 and 0.53 respectively. Compared to Year 12 students, Year 8 students, in general, perceived their classrooms to have greater Collaboration, Congruence and Deference, but less Competition and Teacher Authority. The effect sizes are 0.32, 0.64, 0.20, 0.31 and 0.61. In general, when comparing Year 10 and 12 students, it was seen that Year 12 students perceive a greater level of Competition in their classrooms compared to Year 10 students. The effect size was 0.17.

5.3.7 Classroom Environment in Different Year Levels and Different School Types

Question 7 *To what extent are differences between Multicultural Classroom Environments in Years 8, 10 and 12 classes similar for Boys', Girls' and Coeducational classes?*

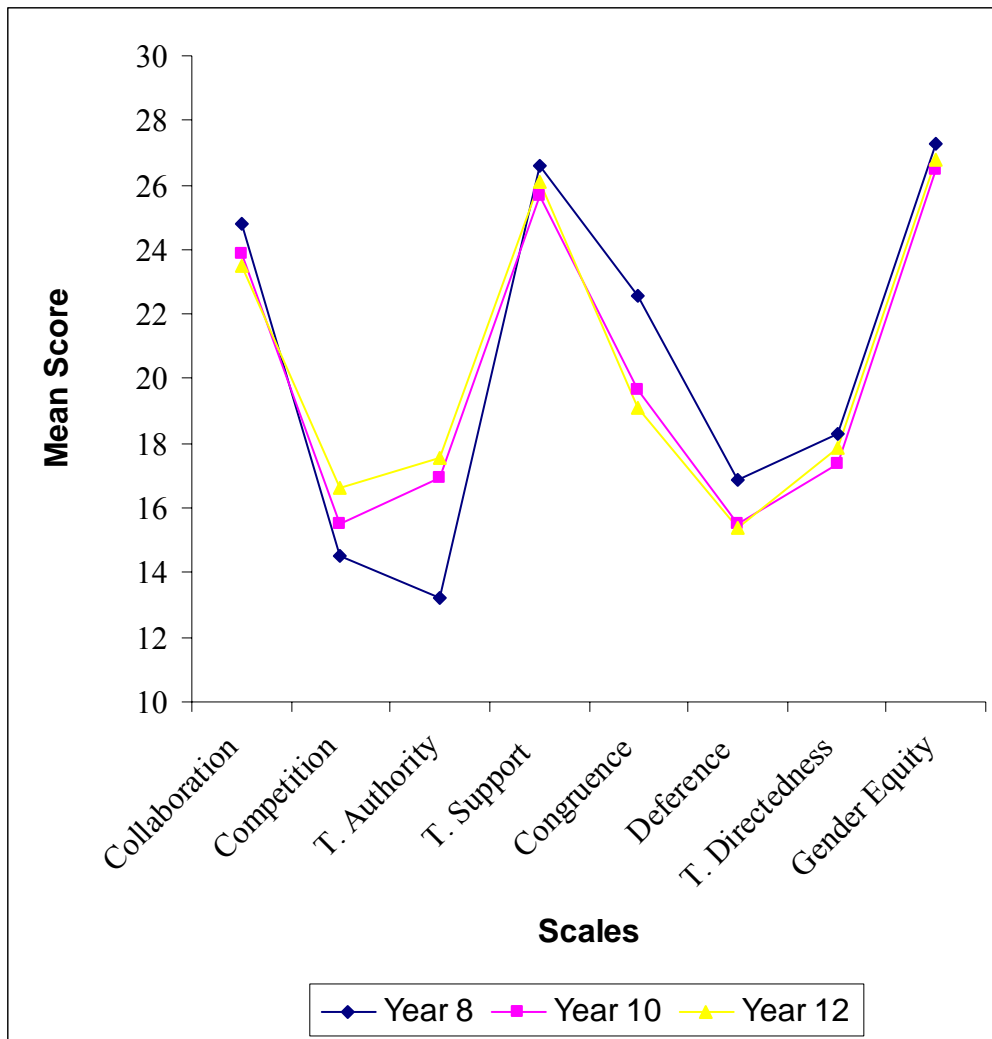


Figure 5.8

Mean Scores for Years 8, 10 and 12 for each Classroom Scale

To probe this question, a two way MANOVA was performed, with the set of eight classroom scales as dependent variables, and with school type and year level as independent variables. Whilst the individual effects of year level and school type were significant ($p < 0.001$), it was also evident that a significant Year Level x School Type interaction existed ($p < 0.001$). Accordingly it was decided to investigate the effect of year level separately for each school type (Coeducational, Girls', and Boys').

As a result of the decision to investigate the effects of year level for each school type individually it was necessary to create three sub-questions (7.1, 7.2 and 7.3).

Sections 5.3.7.1, 5.3.7.2 and 5.3.7.3 will address each of these sub-questions individually.

5.3.7.1 *Classroom Environment in Different Year Levels for Coeducational Schools*

Question 7.1 *For Coeducational schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?*

The one-way MANOVA for Coeducational schools with year level as the grouping variable was significant ($p < 0.001$). Univariate F tests were significant for four of the eight scales: Collaboration [$F(2,374) = 3.41$]; Teacher Authority [$F(2,374) = 20.81$]; Congruence [$F(2,374) = 18.66$]; and Deference [$F(2,374) = 5.63$]. To establish which pairs of year levels have significantly different scores, Tukey's HSD post-hoc procedure with a significant level of 0.05 was employed, and the following results were identified.

Figure 5.9 graphs the results of the different year levels in Coeducational schools for each of the classroom environment scales means, and reveals that in general, Year 8 students perceived less Teacher Authority in their classroom environment than either Year 10 or Year 12 students. The effect sizes were 0.75, and 0.58 respectively. Similarly for Deference, Figure 5.9 shows that Year 8 students, in general, perceived significantly less than both Years 10 and 12. The effect sizes in this instance were 0.33 and 0.39 respectively. It also revealed that Year 8 students, in general, perceived more Collaboration in their classroom environment than Year 12 students. The effect size was 0.34. No other significant results were identified.

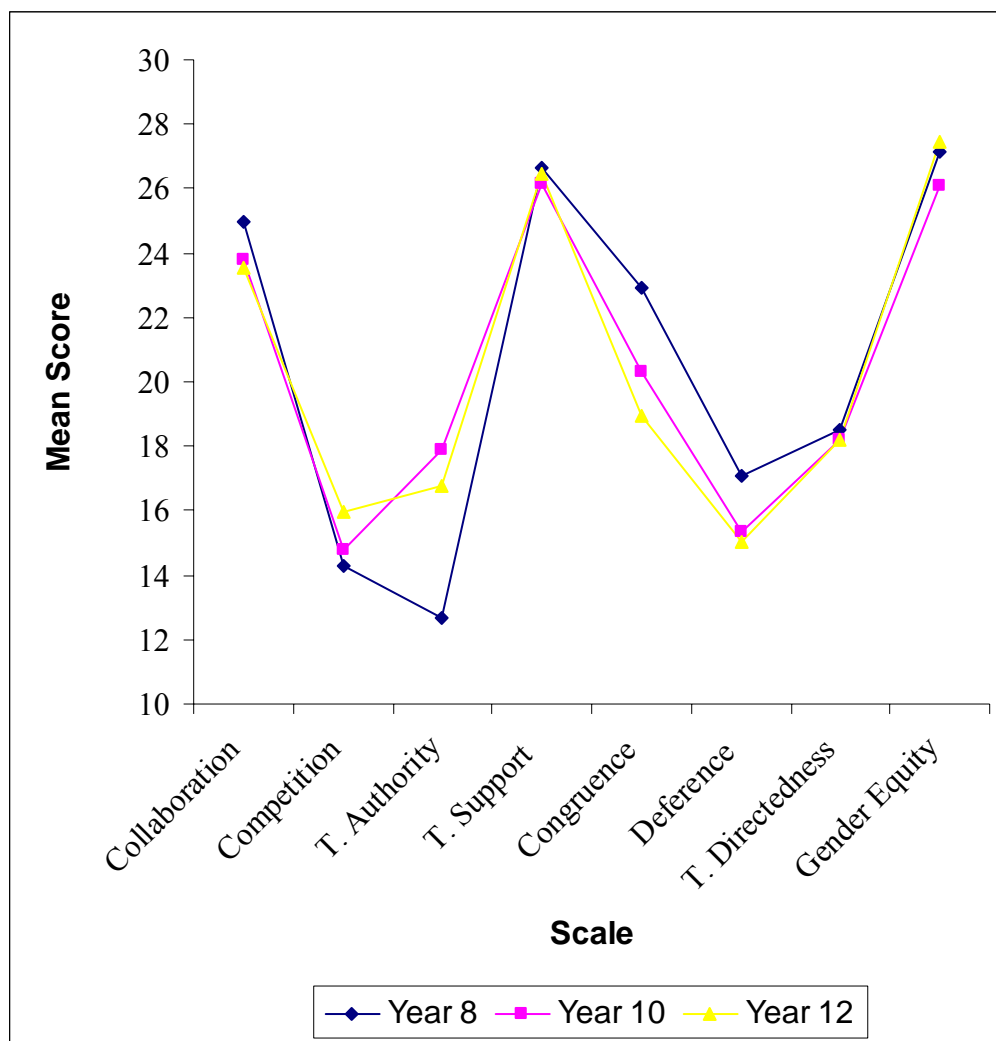


Figure 5.9

Mean Scores for Years 8, 10 and 12 in Coeducational Schools for each Classroom Scale

5.3.7.2 Classroom Environment in Different Year Levels for Boys' Schools

Question 7.2 *For Boys' schools, to what extent does year level influence the students' perceptions of their multicultural classroom environment?*

A similar one-way MANOVA for Boys' schools with year level as the grouping variable was significant ($p < 0.001$). Univariate F tests were significant for four of the eight scales: Collaboration [$F(2,1173) = 4.14$]; Competition [$F(2,1173) = 3.98$];

Teacher Authority [$F(2,1173) = 10.22$]; and Congruence [$F(2,1173) = 7.25$]. Tukey's *HSD* post-hoc procedure with a significant level of 0.001 was again employed.

Figure 5.10 graphs the results of the different Year levels in Boys' schools for each classroom environment scales means, and shows that in general, Year 8 students, perceived higher levels of Collaboration in their classroom than Year 10 students. The effect size was 0.32. Year 8 students, in general, perceived less competition in their classroom as opposed to Year 12 students. The effect size was 0.33. For Teacher Authority Year 12 students, in general, perceived higher levels than both Year 8 students and Year 10 students. The effect sizes were 0.55 and 0.39 respectively. Finally, Year 8 students, in general, perceived more Congruence than both Year 10 and Year 12 students. The effect sizes were 0.29 and 0.41 respectively. No other significant results were identified.

5.3.7.3 Classroom Environment in Different Year Levels in Girls' Schools

Question 7.3 *For Girls' schools, to what extent does year level influence students' perceptions of their multicultural classroom environment?*

A third MANOVA for Girls' schools with year level as the grouping was conducted and found as significant ($p < 0.001$), with significant univariate *F* tests for seven of the eight classroom environment scales: Collaboration [$F(2,440) = 7.66$]; Competition [$F(2,440) = 7.60$], Teacher Authority [$F(2,440) = 20.11$]; Teacher Support [$F(2,440) = 5.73$]; Congruence [$F(2,440) = 36.91$]; Teacher Directedness [$F(2,440) = 3.00$]; and Gender Equity [$F(2,440) = 4.52$]. Tukey's *HSD* post-hoc procedure with a significant level of 0.001 was again employed.

Figure 5.11 graphs the results of the different year levels in Girls' schools for each of the classroom environment scales means and shows that compared with Year 10 students, Year 8 students, in general, perceived a higher level of Collaboration, Teacher Support, Congruence, and Teacher Directedness with a lower level of

Competition and Teacher Authority. The effect sizes were 0.21, 0.31, 0.80, 0.26, 0.23 and 0.55 respectively. Figure 5.11 also shows that compared with the Year 12 students, Year 8 students, in general, perceived a higher level of Collaboration, Teacher Support, Congruence and Gender Equity with a lower level of Competition and Teacher Authority. The effect sizes were 0.35, 0.26, 0.71, 0.28, 0.44 and 0.58. No other significant differences were identified.

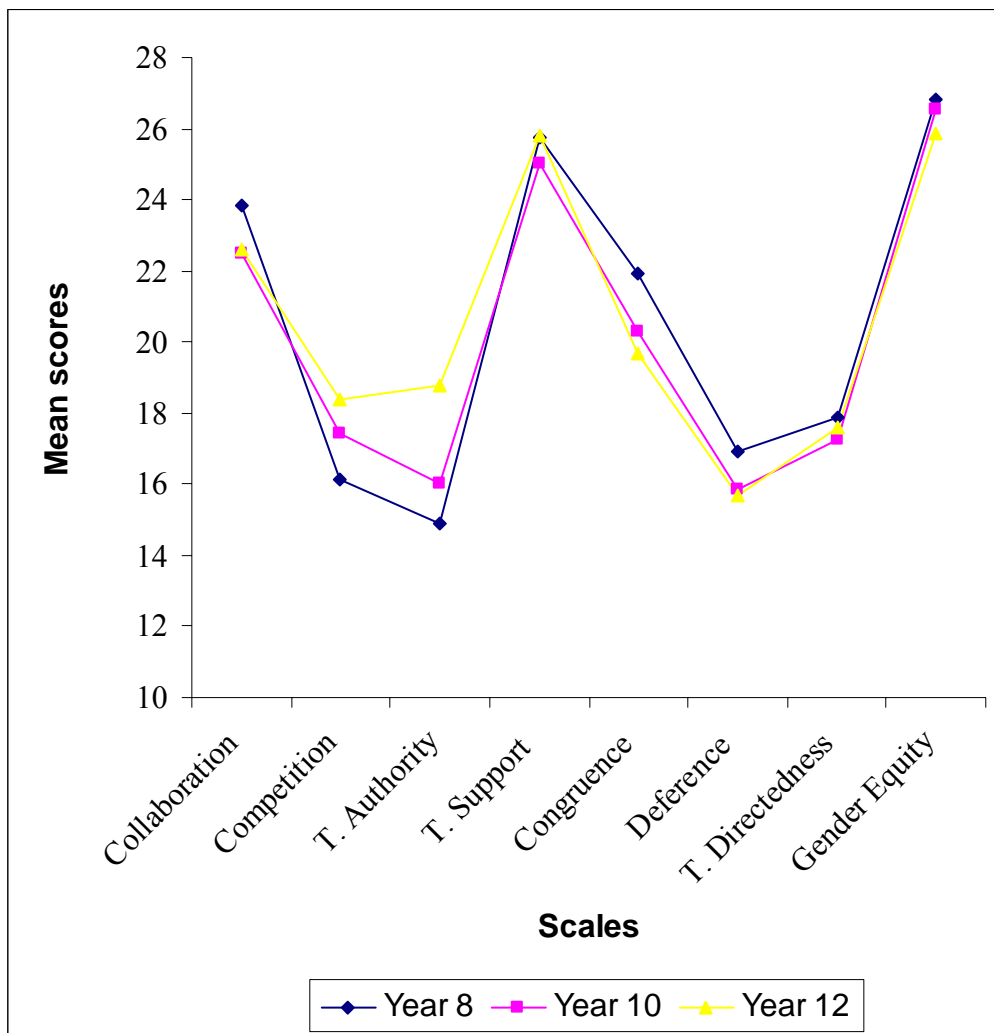


Figure 5.10
Mean Scores for Years 8, 10 and 12 in Boys' Schools for each Classroom Scale

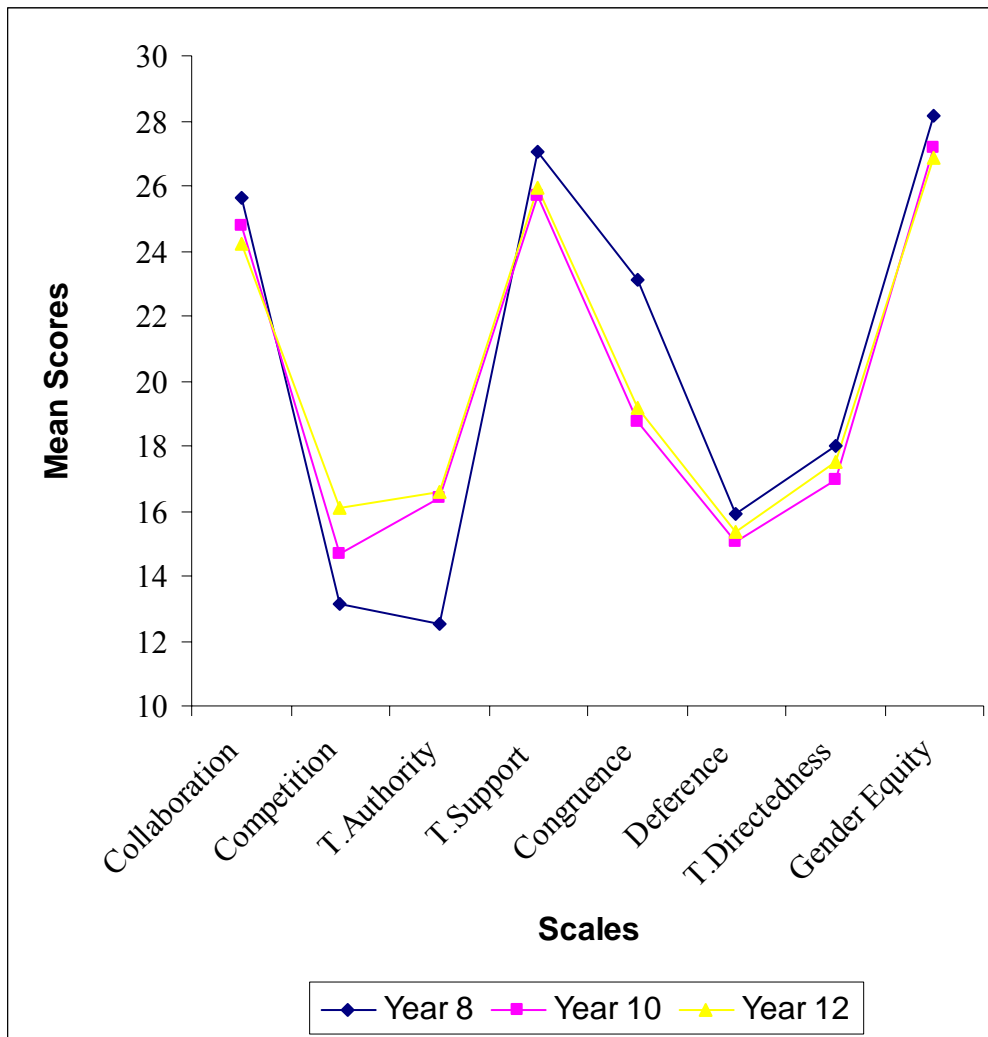


Figure 5.11

Mean Scores for Years 8, 10 and 12 in Girls' Schools for each Classroom Scale

5.3.7.4 Overall trends of Classroom environment in Different Year Levels and Different School Types

In examining all of the *F* tests together it was evident that some general trends are apparent. Year 8 students, in general, perceive a higher level of Collaboration than Year 10 students irrespective of the school type. For the Congruence scale, Year 8 students have a higher perception than either Year 10 or Year 12 students irrespective of school type. Conversely, Year 8 students, in general, perceived less Teacher Authority than Year 10 and 12 students irrespective of school type. Year 12 students,

in general, perceived higher levels of competition in their classroom compared to Year 8 students in both Girls' or Boys' schools but not in a Coeducational setting. A further finding from these analyses was that, with the exception of higher levels of Teacher Authority in Boys' schools, there was no significant difference in perceptions of the classroom scales by Year 10 and Year 12 students, irrespective of school type.

5.3.8 Classroom Environment for Different Gender

Question 8 *To what extent do Multicultural classroom environments differ for male to female students?*

In order to investigate this question it was noted that there were three different school types investigated in the present study: Coeducational, Boys' and Girls'. To probe this question in sufficient detail a decision was made to examine firstly male and female perceptions in Coeducational schools individually; secondly, to examine the perceptions of Boys' and Girls' schools; and thirdly, to examine the differences in gender perceptions irrespective of school type. Therefore to adequately answer Research Question 8 it was necessary to create three sub-questions (8.1, 8.2 and 8.3) that would enable the overall question to be investigated in appropriate detail.

Sections 5.3.8.1, 5.3.8.2 and 5.3.8.3 will address each of the sub-questions individually.

5.3.8.1 Classroom Environment for Different Gender in Coeducational Schools

Question 8.3 *For Coeducational schools, to what extent do multicultural classroom environments differ for male and female students?*

The one-way MANOVA for Coeducational schools only, with Gender as the grouping variable, was significant ($p < 0.001$). Univariate F tests were significant for five of the eight classroom environment scales: Collaboration [$F(1,375) = 5.24$]; Competition [$F(1,375) = 9.86$]; Teacher Authority [$F(1,375) = 27.94$]; Teacher Support

[$F(1,375 = 14.54)$]; and Gender Equity [$F(1,375 = 17.545)$]. The effect sizes were 0.27, 0.32, 0.56, 0.41 and 0.45 respectively.

Figure 5.12 graphs the results of the different gender means in Coeducational schools for each of the classroom scales means, and showed that in the Coeducational schools, boys, in general, perceived a higher level of Competition and Teacher Authority and a lower level of Collaboration, Teacher Support and Gender Equity compared with the girls. The effect sizes were 0.32, 0.56, 0.27, 0.41 and 0.45 respectively.

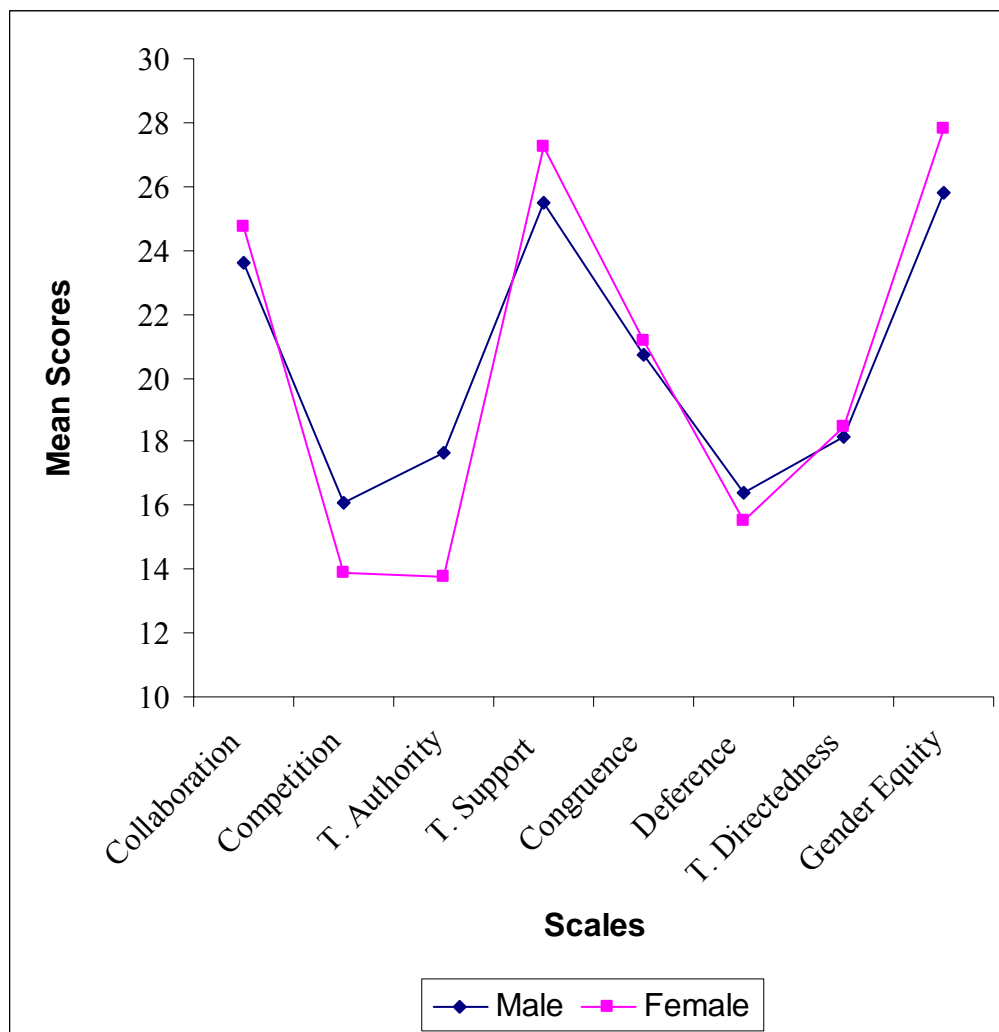


Figure 5.12

Mean Scores for Male and Female Students in Coeducational Schools for each Classroom Scale

5.3.8.2 *Classroom Environment for Different Gender in Boys' and Girls' School*

Question 8.2 *For Boys' and Girls' schools, to what extent do multicultural classroom environments differ for male to female students?*

The investigation into the comparison of multicultural classroom environments for Boys' and Girls' schools was outlined in Section 5.3.3. A MANOVA with the set of classroom environment scale means as the dependent variables, and the school type as the grouping variable, revealed significant differences between Boys' schools and Girls' schools for Collaboration ($F(2,1164) = 20.83$); Competition ($F(2,1164) = 17.75$); Teacher Authority ($F(2,1164) = 4.24$); Teacher Support ($F(2,1164) = 4.319$); and Gender Equity ($F(2,1164) = 5.17$) at $p < 0.05$. Tukey's *HSD* post-hoc procedure indicated significant differences between the Boys' and Girls' schools for each of the above mentioned scales.

Figure 5.13 illustrates the mean scores for the Boys' and Girls' schools against each of the eight classroom environment scales, and reveals that in general, Girls' schools demonstrated a higher level of Collaboration than Boys' schools. The effect size was 0.29. It also showed that Boys' schools had a higher perception of Competitiveness in their classroom environment than the Girls' schools. The effect size was 0.40. Figure 5.13 also showed that in general, Boys' schools perceived a higher level of Teacher Authority than Girls' schools. The effect size was 0.26. Conversely, for the Teacher Support and Gender Equity scales, Girls' schools, in general, perceived higher levels than the Boys' schools. The effect sizes were 0.14 and 0.24 respectively. Overall, the effect sizes quoted are relatively small. There were no significant differences between the Boys' and Girls' schools for each of the other classroom environment scales.

5.3.8.3 *Classroom Environment for Different Gender*

Question 8.3 *Irrespective of school type, to what extent do multicultural classroom environments differ for male to female students?*

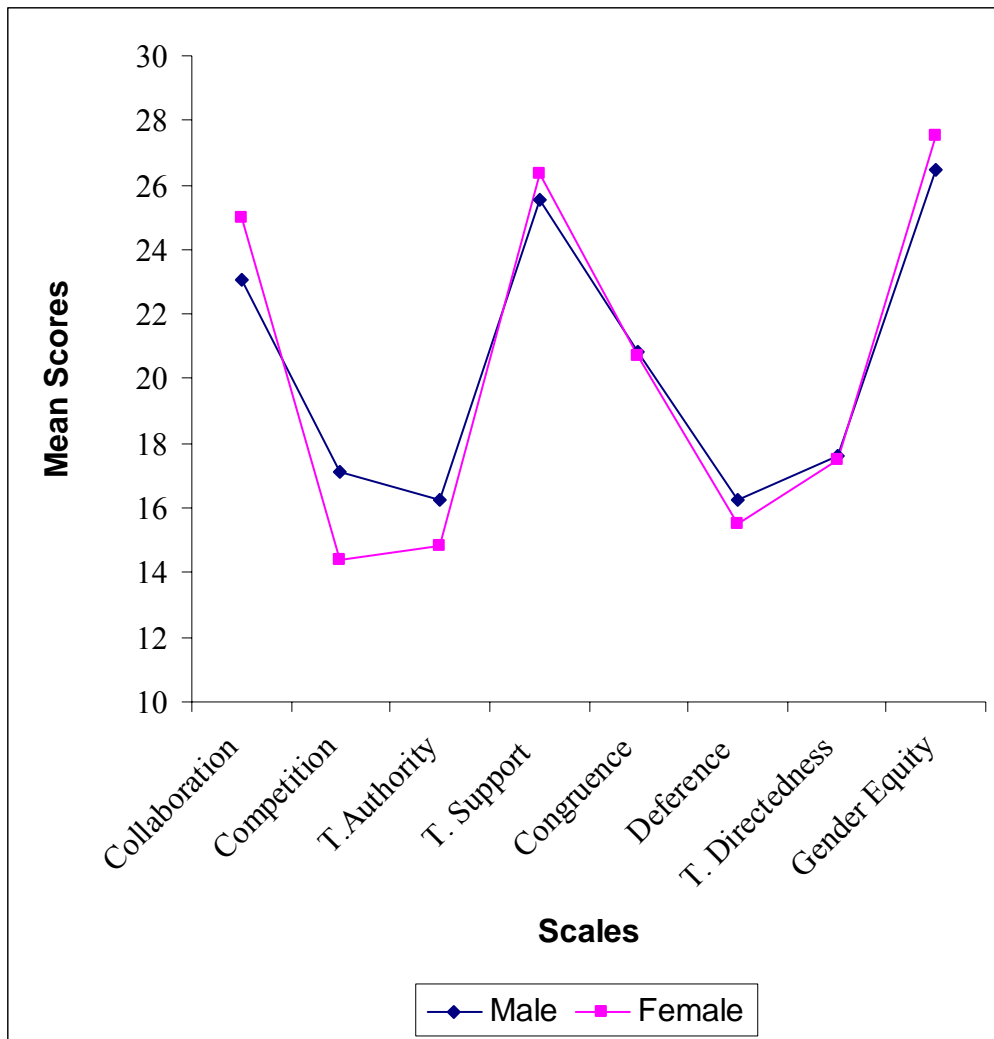


Figure 5.13
Mean Scores for Boys' and Girls' Schools for each Classroom Scale

To investigate the gender differences irrespective of school type, a one-way MANOVA with Gender as the grouping variable was conducted on all of the data samples and was shown to be significant ($p < 0.001$). Univariate F tests were significant for six of the eight classroom environment scales: Collaboration [$F(1,1173) = 46.86$]; Competition [$F(1,1173) = 43.84$]; Teacher Authority [$F(1,1173) = 29.2$]; Teacher Support [$F(1,1173) = 18.93$]; Deference [$F(1,1173) = 7.19$]; and Gender Equity [$F(1,1173) = 28.44$]. The effect sizes were 0.39, 0.37, 0.31, 0.25, 0.16 and 0.29 respectively.

Figure 5.14 graphs the results of the different gender means across all school types for each of the classroom environment scales and revealed that, in general, boys perceived their classroom environment to have higher levels of Competition, Teacher Authority, and Deference compared with girls. The effect sizes were 0.37, 0.31 and 0.16. However, in general, boys perceived their classroom environment to have a lower level of Collaboration, Teacher Support and Gender Equity compared with girls. The effect sizes were 0.39, 0.25 and 0.29 respectively.

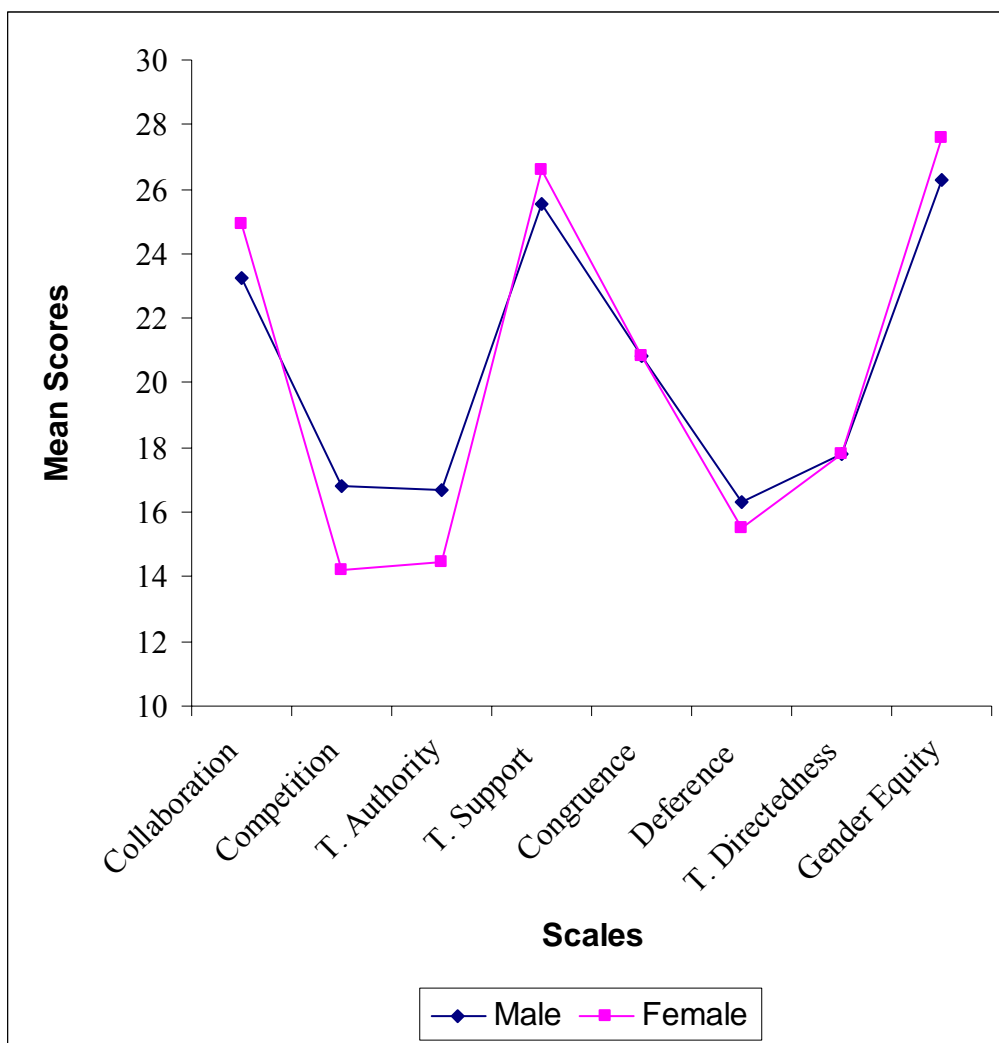


Figure 5.14

Mean Scores for Male and Female students Irrespective of School Type for each Classroom Scale

5.4 CHAPTER SUMMARY

This chapter has reported quantitative analysis of the data collected in this study, and this final section summarizes the key findings. Discussion of these findings occurs in Chapter 6 of this thesis.

Section 5.3 reports analyses of students' classroom environment data for which five key findings are apparent.

First, when examining the country of birth of the student, their father and their mother, it was revealed that significant differences existed across all eight scales. More specifically, when examining the country of birth of the student four scales exhibited significant difference: Collaboration, Competition, Congruence and Deference. In general, students born in USA/Canada perceived greater Collaboration than students from Africa, Australia and Spanish speaking countries, and greater Congruence than students born in Australia, Africa, Asia and Spanish Speaking countries. Students born in Africa perceived greater Competition than students born in Europe, Australia and Pacific Islands. Students born in Britain/New Zealand perceived greater Deference than students born in Africa, Europe, Australia and Pacific Islands. Students born in Asia also perceived significantly greater Deference than students born in Africa or the Pacific Islands.

When considering the father's country of birth, significant differences in students' perceptions of classroom environments were evident in four scales: Collaboration, Deference, Teacher Directedness and Gender Equity. In general, students whose father was born in Australia perceived less Collaboration than students whose father was born in the Pacific Islands or Asia. Students whose father was born in Africa perceived less Deference than students whose father was born in the Pacific Islands, Asia, Australia, Britain/New Zealand or Spanish Speaking countries. Students whose father was born in Asia perceived less Teacher Directedness compared with USA/Canada, Europe, Africa, Australia and Britain/New Zealand groups. Students whose father was born in USA/Canada perceived less gender equity than students whose father was born in Africa, Pacific Islands or Spanish Speaking countries.

Students whose father was born in Africa perceived less Gender Equity than USA/Canada, Australia, Asia, Europe and Britain/New Zealand groups, whilst students whose father was born in Spanish Speaking countries, perceived less than students whose father was born in USA/Canada or Britain/New Zealand.

When considering the mother's country of birth, significant differences in perceptions were evident in three scales: Collaboration, Competition and Teacher Authority. In general, students whose mother was born in either Australia or USA/Canada perceived significantly less Collaboration in their classroom environment than students whose mother was born in the Pacific Islands or Europe. They also perceived less Competition than students whose mother was born in Spanish Speaking countries or Asia. For the Teacher Authority scale, students whose mother was born in USA/Canada perceived less than the Europe, Spanish Speaking and Britain/New Zealand groups. Conversely, students whose mother was born in Europe or Britain/New Zealand perceived greater Teacher Authority than students whose mother was born in Asia, Australia or USA/Canada.

Second, analyses of classroom data revealed that significant differences were evident with six scales when examining school type: Collaboration, Competition, Teacher Authority, Teacher Directedness and Gender Equity. Most specifically, Girls' schools, in general, perceived greater Collaboration than Coeducational and Boys' schools, Conversely, Boys' schools perceived their classroom environments to have significantly higher levels of Competition and Teacher Authority than Girls' schools. Both Coeducational and Girls' schools perceived significantly greater Teacher Support than Boys' schools, whereas Coeducational schools perceived significantly higher levels of Teacher Directedness than Boys' schools. Finally, Girls' schools perceived significantly higher Gender Equity than in Boys' schools. The effect sizes ranged from 0.12 to 0.40.

Third, for Year 12 students, when comparing Religion classes to Study of Religion classes it was revealed that, in general, students in Religion classes perceived significantly lower levels of Gender Equity than in Study of Religion classes. For all other scales there were no significant differences between the classroom environments. This perception was true without considering school type. When school

type was considered it was revealed that there were no significant differences between Religion and Study of Religion classes for any of the scales across all three school types.

Fourth, when considering differences in perceptions of classroom environments by students in different year levels, it is important to note that significant differences were noted for all eight scales. In general, Year 8 students perceived significantly higher Collaboration, Teacher Support, Congruence, Deference, Teacher Directedness and Gender Equity than Year 10 students. Conversely, Year 8 students perceived less Competition in their classroom environments compared with Year 10 students. The effect sizes ranged from 0.17 to 0.53. When comparing Year 8 students to Year 12 students it was revealed that, in general, Year 8 students, compared to Year 12 students, perceived their classroom environments to have greater Collaboration, Congruence and Deference with less Competition and Teacher Authority. The effect sizes range from 0.20 to 0.61. A further important issue to note was that, with the exception of Competition, there were no significant differences in the perceptions of classroom environments between Year 10 and Year 12 students. Year 10 students, in general, perceived less Competition than Year 12 students.

Fifth, when comparing differences in perception of classroom environments by students in different year levels and different school types, a number of significant differences were identified. In general, in Coeducational schools, students in Year 8 perceived significantly less Teacher Authority and Deference than either Year 10 or Year 12 students and greater Collaboration than Year 12 students, and greater Congruence than both Year 10 and Year 12 students. There were no significant differences between Year 10 and Year 12 students.

In Boys' schools, Year 8 students perceived, in general, significantly greater Collaboration than Year 10 students, less Competition than Year 12 students and greater Congruence than both Year 10 and Year 12 students. It was also noted that Year 12 students perceived significantly higher Teacher Authority than both Year 8 and Year 10 students. Effect sizes ranged from 0.29 to 0.55.

In Girls' schools, Year 8 students, in general, perceived significantly higher levels of Collaboration, Teacher Support, Congruence and Teacher Directedness, with less Competition and Teacher Authority than Year 10 students. Compared with Year 12 students, Year 8 students perceived significantly more Collaboration, Teacher Support, Congruence and Gender Equity, with less Collaboration and Teacher Authority. Effect sizes ranged from 0.21 to 0.71. No significant differences were observed between Year 10 and Year 12 students.

This section has reviewed the major findings of the quantitative data analysis. Apart from the intrinsic importance, these findings form an important basis, along with previous learning environment, multicultural education and Catholic school research for Chapter 6 of this thesis.

CHAPTER 6

DISCUSSION OF RESULTS

6.1 INTRODUCTION

This chapter draws together the research findings of Chapter 5 and ensures that the research questions stated in Chapter 1 are answered and discussed in the light of Catholic school literature, multicultural literature and previous learning environment research. Thus, the purpose of this chapter is to interpret the research findings and assess their educational importance. The research questions outlined in Section 1.2.2 are used to organise this chapter.

In Sections 6.2 to 6.3.7, the research questions and the respective sub-questions are discussed. These discussions are based on the results reported in Chapter 5. It needs to be understood that, although statistical analyses arrive at conclusions about a population based on a sample, they do not provide an assessment of the educational importance of any conclusions (Daniel, 1977; Lawrenz & Welch, 1983). The chapter summary (Section 6.4) provides a basis for the conclusionary nature of Chapter 7.

6.2 RESEARCH QUESTION RELATED TO THE DEVELOPMENT OF A MULTICULTURAL CLASSROOM ENVIRONMENT INSTRUMENT

6.2.1 What are the Key Characteristics of Multicultural Classroom Environments in Catholic Schools ?

One of the methodological principles for this study required the development of an instrument for the assessment of multicultural classroom learning environments. The

literature review reported in Chapter 2, and the stakeholder perceptions discussed in Chapter 4, indicated that the important classroom learning environment dimensions of Catholic schools were student–student relationship, student–teacher relationship, community relationship, gender, student–student competition, knowledge transmission, teacher control, degree of compliance, individualism and modelling and classroom organisation.

In contemporary multicultural Australia, it is clear that the specific characteristics of schools, their policies and teaching practices will play an important role in ensuring the successful integration and education of students from other cultural backgrounds (Hamilton & Moore, 2004). Effective communication between home and school, committed leadership by the principal, involvement of parents, teachers with appropriate skills and expertise and the provision of a safe and supportive learning environment, are key issues in addressing cultural diversity in schools (Hamilton & Moore, 2004).

A substantial amount of research of the past 40 years has focused on the development of instruments for assessing learning environments, especially at a classroom level (Aldridge & Fraser, 2000; Dorman, 1994; Fisher & Waldrip, 1996, 1999; Fraser, 1986; Fraser, McRobbie & Fisher, 1996; Giddings & Fraser, 1990; Levy, den Brok, Wubbels & Brekelmans, 2003). These instruments were examined to check the suitability of their scales and items for assessing the unique classroom environment of Catholic secondary schools in Queensland. Inappropriate scales and items were replaced in accordance with the development criteria explained in Chapter 4. The nine scales of the pilot multicultural classroom learning environment instrument were field tested. Analyses of these data resulted in a refined 64 item multicultural classroom learning environment instrument with eight reasonably distinct scales. Full details of the decisions taken are provided in Chapter 4.

As already noted in Chapter 4, the multicultural classroom learning environment instrument used in this study exhibited very satisfactory psychometric properties. That is, the factorial structure, scale internal consistency, discriminant reliability and ability to discriminate between individuals, indicated that the instrument was valid and reliable. The multicultural classroom learning environment instrument used in the

present study, known as the Multicultural classroom Environment Instrument (MCEI), also had satisfactory economy, requiring approximately 45 minutes for administration. It is evident that the development of a context-specific instrument for multicultural classroom learning environments in Queensland Catholic secondary schools has been possible.

6.3 TO WHAT EXTENT DO CATHOLIC SECONDARY SCHOOL STUDENTS FROM DIFFERENT CULTURES DIFFER IN THEIR PERCEPTIONS OF THEIR CLASSROOM ENVIRONMENT?

Section 1.2.2 outlined how this particular research question would be subdivided into three associated sub-questions where the students' perceptions of their classroom environment be investigated with respect to the student's country of birth, their father's country of birth and their mother's country of birth. The term 'Country of Birth' in the present study is defined as the country where the individual was born. For example, when reference is made to the Pacific Islands group, it is referring to the students who were born in the Pacific Islands. Similarly, for the father's country of birth and the mother's country of birth, the reference to the country of birth is to the country where the father or mother was born. Students who participated in this study were enrolled in Queensland Catholic secondary schools. In the present study, it is argued that the individual's country of birth has an influence on their cultural background. It must be acknowledged that in the present study some students or their parents may in fact have been residents of Australia for some time. However, because they were born in a particular country they have, for the purpose of the present study, been grouped according to their country of birth. The results of the present study are reported using these three sub-questions in Sections 5.3.2, 5.3.2.1, 5.3.2.2, and 5.3.2.3. Therefore, the discussion of the results reported in the above sections will be organised and addressed according to the individual sub-questions. Section 6.3.1 will discuss the results pertaining to the student's country of birth. Section 6.3.2 will examine the results pertaining to the father's country of birth, whilst Section 6.3.3 will discuss the results regarding the mother's country of birth. Finally, Section 6.3.4 will

detail some concluding remarks regarding the influence of country of birth on the students' perceptions of their classroom environments.

6.3.1 Student's Country of Birth

In comparing differences in students' perceptions of their classroom environment with respect to the student's country of birth, the present study revealed that compared to students born in the USA/Canada, students born in Africa, Australia or Spanish speaking countries perceived less Collaboration, whereas students born in Africa, and those born in the Pacific Islands, Europe or Australia, perceived less Competition in their classroom environment. Some of these results are consistent with the findings of Waldrip and Giddings (1993) where they compared the science classroom environment in Australia, the USA, South Pacific Islands and Asia using the Science Learning Environment Inventory (SLEI: Giddings & Fraser, 1990) and a modified form of the Test of Science Related Attitudes (Fraser, 1981). From their findings they asserted that students from the Pacific Islands perceived greater Cohesion and therefore less Competition than did students in Australian classrooms. This is consistent with the findings of the present study.

Further research conducted by Waldrip and Giddings (1995) in Australian, American and Asian classrooms, identified that students in Asian classrooms perceived less Cohesion than students in classrooms in either Australia or the USA. Whilst Waldrip and Giddings's study was conducted in Asia, America and Australia, and the present study was conducted in Queensland Catholic secondary schools, their findings were consistent with those of the present study.

In a study conducted by Jegede, Agholor and Okebukola (1995), 328 students in Nigerian schools commented on their perceptions of their classroom environment using the Socio – Cultural Environment Scale (SCES: Jegede & Okebukola, 1988), and reported that African students had very high perceptions of Authorisation and Goal Structure in their classroom environment. These findings are consistent with the present study which reported that students in Queensland Catholic secondary schools

born in Africa had the highest perception of Competition in their classroom environment compared to the other cultural groupings used in the present study.

Cunningham-Florez (2001) draws attention to the fact that African students often come from an educational background where the teacher is regarded as an 'unquestioned expert'. Research by Sangster (2001), on recently arrived African students, found that they were very individual in terms of their life experience and exposure to different forms of education. A recommendation from Sangster's work was for a more teacher-centred approach to learning. The results of the present study affirm that African students perceived a more structured approach in their classroom.

Another study by Idiris and Fraser (1994) investigated the perceptions of 1,175 Nigerian students using the Constructivist Learning Environment Survey (CLEI: Taylor & Fraser, 1991) and the Individualised Classroom Environment Questionnaire (ICEL: Fraser, 1990), and found that African students perceived high levels of Student Centeredness (i.e. Competition) in their classroom environment which in turn negatively affected enquiry skill proficiency. This perception of high levels of Student Centeredness (Competition) was consistent with the findings of the present study.

The present study also asserted that, compared to students born in the Pacific Islands, Africa, Europe or Australia, students born in Britain/New Zealand perceived high levels of Deference (i.e. willingness to verse own opinion) in their classroom environment. The present study also identified that those students born in Asia perceived higher levels of Deference than students born in the Pacific Islands or Africa. The findings pertaining to the students born in Britain/New Zealand is consistent with the research undertaken by Burden and Fraser (1993), who administered the short form of the Individualised Classroom Environment Questionnaire (ICEQ: Fraser, 1990) to 203 students in classrooms in England and found that they perceived a high degree of Openness with high levels of Participation and Independence. This is consistent with the findings of the present study and previous studies (Fraser, 1982; Fraser & Butts, 1982; Fraser & Walberg, 1991).

Finally, the present study reported that compared to students born in Australia, Africa, Asia or Spanish speaking countries, students born in the USA/Canada perceived

higher levels of Congruence (i.e. learning associated with their home environment) in their classroom environment. From this result it may be interpreted that students born in the USA/Canada could use their cultural knowledge learned at home to make sense of the concepts at school and vice versa. This result seems to be inconsistent with the findings of Dhindsa and Fraser (2003). They administered the Cultural Learning Environment Inventory Questionnaire (CLEQ; Waldrip, 1996) to 475 students in Brunei and identified that the students perceived a high degree of Congruence in their classrooms. They attributed this high degree of Congruence to the strong family orientation and the continuing practice of the extended family that exists in Brunei. This in turn indicates that students may well be educating other family members at home. The inconsistency with the present study focuses on the fact that the extended family model is more than likely to exist in Asian, African, Pacific Island and Spanish cultures than USA/Canada cultures. The findings of the present study seem inconsistent with this previous research and therefore may warrant further investigation.

The results of the present study should be examined in conjunction with research conducted by Sangster (2001), who asserted that in many cases, students from non-English speaking backgrounds became confused during learning, due to mismatched learning patterns between how they had been previously taught and teaching strategies in their present environment. As a result, they struggled to develop their literacy skills. Culturally diverse students, when entering a new school system, are not only entering a new educational environment but also a new cultural environment which may be aligned with different values and goals (Zhou & Bankston, 2000). The results of the present study affirm such findings and highlight the fact that students from different cultural backgrounds have different perceptions of their classroom environments.

6.3.2 Father's Country of Birth

As detailed in Section 6.3, the father's country of birth is defined, for the present study, as the country where the father was born. It should be noted that the country of birth of the student is not differentiated in this section of the present study. In

examining the father's country of birth, the present study identified that student perceptions differed for the Collaboration, Deference, Teacher Direction and Gender Equity scales. For Collaboration, the present study found that compared to students whose fathers were born in Australia, students whose fathers were born in Asia or the Pacific Islands perceived higher levels of Collaboration in their classroom environment. These findings are generally consistent with the research of Margianti, Fraser and Aldridge (2001) who asserted that students in Indonesian high schools perceived high levels of Cohesion in their classroom environments. They also asserted that the Indonesian students perceived high levels of Teacher Direction, which is also consistent with the findings of the present study. Non-native English speaking students often come from an educational background where the teacher is regarded as an 'unquestioned expert' (Cunningham-Florez, 2001). This observation is supported by the present study.

The findings of the present study are also generally consistent with the research of Waldrip and Giddings (1993) who investigated the perceptions of students in secondary schools in the Pacific Islands and Australia and asserted that Pacific Islander students perceived greater Cohesion than Australian students. Conversely, the findings of the present study are inconsistent with later research conducted by Waldrip and Giddings (1995) who asserted that Australian teachers perceived greater Student Cohesion than both Pacific Island and Asian teachers. This inconsistency may be explained by the fact that the research conducted by Waldrip and Giddings (1995) examined teacher perceptions in Pacific Island, Asian and Australian secondary schools whilst the present study examined the perceptions of students in Queensland Catholic secondary schools whose fathers were born in particular countries. Waldrip and Giddings (1995) and Treagust (2003) identified that there were differences in the perceptions of teachers and students with respect to their classroom environment.

The research conducted by Aldridge and Fraser (2000) asserted that students in Australian classrooms perceived greater Cooperation than students in Asian classrooms. This is inconsistent with some of the findings of the present study. The inconsistencies identified between the present study and those cited above may be partially explained by the fact that the results of the present study were for students whose fathers were born in the various countries identified and not the students

themselves, as was the situation with the research conducted by Aldridge and Fraser (2000) and Waldrip and Giddings (1993, 1995). The issue of a student or their parents being born overseas but having lived in another country, such as Australia, for a period of time raises the issue of acculturation. Anderson (2004) defines acculturation as the cultural changes that occur when two or more cultures come in contact. The psychology of acculturation seeks to understand continuities and changes in individual behaviours that are related to the experience of two cultures coming together (Berry, 1995). Individuals may in fact adapt to a new culture during the process of acculturation (Berry, 2001). Students need knowledge of the culture to be able to adapt to and function sufficiently within cultural institutions, such as schools, and to gain access to culturally valued knowledge and expertise (Berry, 2000). It is possible that the students who are first generation to a country (i.e. Australia) may in fact have slightly different perceptions to students whose parents were actually born in the country. The first generation students may in fact be experiencing acculturation to their new cultural environment. Levy, Wubbels and Brekelmans (1996) asserted that the longer a student spent in a particular country the more similar their perceptions were to the students who were actually native to the country. Also, students who lived longer in a country noticed less dominance than those who had just arrived (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003). While highly plausible, these findings warrant further investigation.

With respect to Teacher Directedness, the present study found that compared to students whose fathers were born in the USA/Canada, Europe, Africa, Australia or Britain/New Zealand, students whose fathers were born in Asia perceived higher levels of Teacher Directedness. This is generally consistent with the findings of Margianti, Fraser and Aldridge (2001) and Levy, Wubbels and Brekelmans (1996) who asserted that students in Asian classrooms perceived high levels of Teacher Dominance or Teacher Direction in their classroom environment.

The present study also reported that students whose fathers were born in Africa perceived lower levels of Deference (i.e. verse their own opinion) than students whose fathers were born in Asia, Britain/New Zealand, Australia, Pacific Islands or Spanish speaking countries. These findings are generally consistent with the findings of Jegede, Agholor and Okebukola (1995) who asserted that students in African schools perceived high Authorisation and Societal Expectations in their classroom

environments. Sangster (2001) identified that African students were very individual in terms of their life experiences and exposure to different forms of education.

Cunningham-Florez (2001) found that African students have come from educational systems where the teacher is regarded as the 'unquestioned expert'. This may give some insight and explanation for the low levels of Deference (verse own opinion) perceived by students of African origin in the present study.

In the last 10 years the number of people immigrating to Australia from Africa has increased from 2.6% in 1991 to 10.6% of the total immigration figures in 2001 (Department of Immigration and Multicultural and Indigenous Affairs, 2003). This increase between 1991 and 2001 has translated into a significant influx of students born in Africa into Queensland Catholic schools. Families recently arriving from regions such as Asia, the Middle East and Africa, are locating to large cities (Marginson, 2004). One particular cultural group in Australia whose numbers have significantly increased in recent years is the Sudanese. In 2001, nearly 5000 Sudan-born people entered Australia, either as migrants or refugees, an increase of 105% from 1996 (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Approximately 8% of these people located to Queensland. It has also been identified that approximately 30% of the Sudanese people located in Queensland are school age students (Department of Immigration and Multicultural and Indigenous Affairs, 2004). Whilst some of these students initially enter Government schools, a number also enter Catholic schools in Queensland. In 2004, there were over 200 students of Sudanese origin in Queensland Catholic schools (Queensland Catholic Education Commission, 2004). The rapid growth of the Sudanese community has prompted the Department of Immigration and Multicultural and Indigenous Affairs to classify the Sudanese community as one of Australia's 'new and emerging' communities (Sudanese Australian Integrated Learning, 2003).

For many of these students, their recent arrival into Australia creates significant issues. A major task facing migrant and refugee children, on arrival in a new country, is to adapt to a new school environment (Hamilton & Moore, 2004). This challenge may hamper their ability to verse their own opinions in their classroom environments. Barriers such as language, recentness of arrival and cultural restraint may explain the low levels of Deference perceived by students whose fathers were born in Africa.

Dhindsa and Fraser (2003) also asserted that the poor language skills were a barrier to students offering their opinions. Students often fear a loss of identity when they are unable to communicate effectively (Beebe, 1983). Ryan (2000) asserted that if a student does not have a command of the language, they do not have a personality. Such assertions may explain the lack of Deference perceived by students whose fathers were born in Africa. The high level of Deference perceived by students whose fathers were born in the Pacific Island is generally supported by the research conducted by Waldrip and Giddings (1995) which identified that students in South Pacific Island classrooms perceived higher levels of Open Endedness than students in Asian, Australian or American classrooms.

For the scale Gender Equity, the present study revealed that compared with students whose fathers were born in the USA/Canada, Australia, Asia, Europe or Britain/New Zealand, students whose fathers were born in Africa perceived less Gender Equity in their classroom environment. Similarly, students whose fathers were born in Spanish speaking countries perceived less Gender Equity than students whose fathers were born in the USA/Canada or Britain/New Zealand. Finally, students whose fathers were born in the USA/Canada perceived higher levels of Gender Equity than students whose fathers were born in Spanish speaking countries, Asia or the Pacific Islands. There is very little research regarding students' perceptions of Gender Equity in their classroom environment. This is despite the fact that Gender Equity is a scale in a number of classroom environment instruments including You and Your Classroom (YYC; Waldrip, 1996) and Students Cultural Environment Questionnaire (SCLEQ; Waldrip & Fisher, 1996). Further investigation into students' perception of Gender Equity in their learning environment is warranted. The importance of further research into this area is supported by the findings of Barber, Chadwick and Oerter (1992) who asserted that genders are treated differently in certain cultures. The differences in how gender is perceived and treated in different cultures may explain the findings of the present study. The relationship between gender and culture asserted by Barber et al. (1992) raises the issue of patriarchy. Kincheloe and Steinberg (1997) defined patriarchy to be the gender arrangements in which men form the dominant social group. In a patriarchal society, the male role is granted a higher status than the female role. The woman, with her 'inferior' form of knowledge, is an inadequate authority in such a society (Luttrell, 1993). In some Asian, Pacific Island, Spanish and African

cultures, the roles of males and females differ. The role of women in African countries varies according to differing economic, religious and cultural backgrounds. Religious differences in Africa have somewhat precluded women from being influenced by the Western ideal and has led to a situation of very unequal representation of women's rights (Ross, 2004). The obstacles facing women in Africa are great. In the Pacific Islands, women play a key role in 'binding the family' (Vaa, 2002). However, many of the Pacific Island countries have a semi-subsistence economy and are vulnerable to market trends. This fragile economic situation places women as a group most affected by economic downturns (Samoa NGO Shadow Report, 2004). The results of the present study concur with the assertion regarding the perception of gender equity in different cultures: that gender equality is more established in traditional western cultures such as the United States and Australia. However, further investigation on the impact of gender on classroom perceptions amongst cultural groups may warrant further investigation.

6.3.3 Mother's Country of Birth

As detailed in Section 6.3, the mother's country of birth is defined as the country where the mother was born. It should again be noted that the country of birth of the student is not differentiated in this section of the present study. When considering the mother's country of birth the present study reported that students' perceptions differed for Teacher Authority, Competition and Collaboration. Compared to students whose mothers were born in the USA/Canada, students whose mothers were born in Spanish speaking countries perceived more Teacher Authority. Students whose mothers were born in Asia perceived less Teacher Authority than those students whose mothers were born in the USA/Canada. Also, students whose mothers were born in Europe perceived greater Teacher Authority in their classroom environment compared to students whose mothers were born in either Asia or Australia. Sometimes students from non-English speaking backgrounds come from educational systems where the teacher is seen as the expert, and as a result they perceive a high degree of Teacher Authority in their classroom environment (Cunningham-Florz, 2001).

The findings of the present study are generally consistent with the research of Levy, den Brok, Wubbels and Brekelmans (2003) who administered the Questionnaire on Teacher Interaction (QTI: Wubbels & Levy, 1991; Wubbels et al., 1985) to 3,023 students. In their research they asserted that Spanish speaking students perceived their teachers demonstrating more leadership, whilst the Asian students perceived their teachers as being less strict. Both of these findings are consistent with the present study despite the fact that they were not investigating the mother's country of birth as was the case in the present study. However, it must be noted that in some cultures the parental influence is important to the students' perceptions (Chen & Stevenson, 1995; Stevenson, Chen & Lee, 1993). Two other studies by den Brok et al. (2002) and Levy et al. (1996) further support the findings of the present study in that Spanish speaking students perceived their teachers were more dominant or authoritative. Weistra, Kanselaar, van der Linden and Lodeewijks (1999) administered the Inventory of Perceived Study Environments (IPSE: Weistra, Kanselaar, van der Linden & Lodeewijks, 1999) to students in European universities and found that they experienced the classroom environment as traditional with an emphasis on note taking and teacher direction. This supports the findings of the present study in that students whose mothers were born in Europe perceived higher levels of Teacher Authority compared to students whose mothers were born either in Asia or Australia.

The present study found that students whose mothers were born in Asia or Spanish speaking countries perceived their classrooms as having greater Competition than students whose mothers were born in Australia or the USA/Canada. These findings are generally supported by the research of Levy, den Brok, Wubbels and Brekelmans (2002) who asserted that Asian students perceived greater Competition in their classroom environments compared to USA students. Similarly, Waldrip and Giddings (1995) in administering the Science Learning Environment Inventory (Giddings & Fraser, 1990) to teachers in Asian, American and Australian schools, asserted that compared to Asian teachers, teachers in the USA and Australia tended to perceive greater Student Cohesion (i.e. less competition). Although Waldrip and Giddings (1995) examined teacher perceptions their research is, in general, supportive of the findings of the present study.

Conversely, the research by Margianti, Fraser and Aldridge (2001), in administering a modified version of the What Is Happening in This Class? Questionnaire (WIHIC: Aldridge & Fraser, 2000; Fraser, McRobbie & Fisher, 1996) and an attitude scale derived from the Test of Science Attitudes (TOSRA, Fraser, 1981) to students in Indonesian high schools, asserted that Indonesian students perceived high levels of Cohesion in their classroom environments, contradicting the findings of the present study. This inconsistency may be partially explained by the fact that Margianti, Fraser and Aldridge's (2001) research examined only Indonesian students whilst the present study examined the perceptions of students from a range of Asian cultures. Perhaps there are some differences in students' perceptions of their classroom environments within the various Asian sub-cultures. This concept may warrant further investigation. Also the study of Margianti, Fraser and Aldridge (2001) examined the perceptions of students born in Indonesia and attending Indonesian high schools, where as the present study examined the perceptions of students attending Queensland Catholic secondary schools whose mothers were born in other countries. However, it should be noted that Asian adolescents believe that the road to success is through academic achievement (Chen & Stevenson, 1995). Parental influence is important in establishing the high standard in Asian cultures (Stevenson, Chen & Lee, 1993). The high level of competition perceived by students whose mothers were born in Asia reported in the present study, may be attributed to the cultural influence for high achievement. Other studies have linked the influence of family and academic aspiration in various cultures (Guerra & Braungart-Rieken, 1999; Mau, Hitchcock & Calvert, 1998; Otto, 2000). Therefore the differences in the perceptions of student's country of birth groupings compared to those groupings of the mother's country of birth may warrant further investigation.

With respect to Collaboration, the present study found that students whose mothers were born in the Pacific Islands perceived greater levels of Collaboration compared to students whose mothers were born in Australia. This finding is supported by Waldrip and Gidding (1993) who administered the Science Learning Environment Inventory (SLEI; Fraser, McRobbie & Giddings, 1993; Giddings & Fraser, 1990) and asserted that Pacific Island students perceived higher levels of Cohesion compared to Australian students. The similarity of the USA/Canada educational system to the Australian educational system may account for the similarity in perceptions identified

in the present study for those students whose mothers were born in the USA/Canada or Australia. Conversely, research conducted by Waldrip and Giddings (1995) identified that teachers from Pacific Island schools perceived less Student Cohesion than teachers in Australian or American schools, thus contradicting the findings of the present study. It is also asserted in the present study that students whose mothers were born in Australia or the USA/Canada perceived less Collaboration than students whose mothers were born in Europe. Research conducted by Weistra, Kanselaar, van der Linden and Lodeewijks (1999) who researched European University students asserted that European students desired classroom environments that were not strongly determined by national (cultural) characteristics.

6.3.4 Concluding Remarks

The present study has yielded a number of significant results regarding the classroom perceptions of students who either themselves or their parents were born in a variety of countries. Some of these results are consistent with the findings of previous research whilst some are inconsistent with previous findings. From the present study and previous studies, it is evident that students' cultural background is related to their perceptions of their classroom environment (Levy, Wubbels & Brekelmans, 1996) and this cultural background may in fact have a greater effect on their education than the subject content taught in these classroom environments (Fraser & Dhindsa, 2003; Jegede & Okebukola, 1990).

Schools are becoming increasingly multicultural and diverse in their scope and clientele and so the investigation of students' cultural environments is assuming more critical importance. Students' perceptions of their classroom environments are influenced by factors such as student cultural background (den Brok et al., 2002, 2003; Fraser & Dhindsa, 2003; Levy, Wubbels & Brekelmans, 1996; Levy et al., 2003; Waldrip, 1996), teacher cultural background (den Brok et al, 2002, 2003; Levy et al., 1996), acculturation (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003), family cultural environment (den Brok et al., 2003; Levy, Wubbels, Brekelmans & Morganfield, 1997); and cultural composition of the class (Dhindsa & Fraser, 2003; Evans & Fisher, 2000; Levy, Wubbels & Brekelmans, 1996; Marjoribanks, 2003)

Some of these influences were investigated in the present study. However, further research into the effects of some of these influences is recommended.

Studies have found that the family appears to play a critical role in a child's academic career aspirations (Guerra & Braungart-Rieken, 1999; Mau, Hitchcock & Calvert, 1998; Otto, 2000). There have been varying opinions and findings as to which specific family characteristics influence student aspirations (Taylor, Harris & Taylor, 2004). In a culturally diverse society the influence of family on educational aspirations and performance is important (Chen, Stevenson & Lee, 1993; Stevenson & Chen, 1995). Second generation, or children from non-English speaking migrant parents achieve higher secondary and tertiary education participation than the general population (Department of Immigration and Multicultural and Indigenous Affairs, 2003). Among Asian students, educational indicators improve dramatically in the second generation (Marginson, 2004). Some migrants from Middle East countries experience acculturational dissonance (Zhou, 2004). The social mobility of migrants in the first and succeeding generations varies not only by national origin, but also by the factors of exit (i.e. migration or refugee) (Marginson, 2004). There has also been a change in the educational standards of the students and their parents entering Australia. The 1970s were characterised by migrants with low socioeconomic and educational standards, whereas in 2001 26% of recently arrived migrants held bachelor degree qualifications or higher (Hugo, 2004). Such factors influence student perceptions and warrant further examination.

Australian 'multiculturalism' sits somewhere between inclusive monoculture and managed diversity (Marginson, 2004). The Prime Minister, in the foreword to *Multicultural Australia: United in diversity* (2003) wrote that the government must remain committed to nurturing an inclusive society within Australia and maintain its proud record of community harmony (Howard, 2003).

The lodestone for migrant families is the educational success of their student children (Inglis, 2003). This ties the great bulk of migrant families to the mainstream school curriculum regardless of their national origins. Despite this assertion, the present study has identified differences in classroom perceptions do exist for student from different cultural backgrounds.

The Catholic church in Australia has taken, and continues to take, important initiatives to help refugees and migrants (Australian Catholic Bishops, 2002). Catholic schools and Catholic Education Offices must continue to make Catholics more conscious of the broad range of cultures in the Church. There has been a gradual change in the cultural demographic of the Church which in turn may impact on Catholic schools and their enrolments (Grech & Cahill, 2005). The overall profile of the Catholic church in Australia is one of increasing diversification.

It is evident that cultural diversity is an extremely complex variable and many explanations have been provided for its association with students' perceptions of their learning environment (Levy, den Brok, Wubbels, & Brekelmans, 2002). For schools to successfully address the increasing diversity and complexity of their classrooms, they must acknowledge and understand these changes, and modify pedagogical practices accordingly.

6.4 TO WHAT EXTENT DO MULTICULTURAL CLASSROOM ENVIRONMENTS IN DIFFERENT TYPES OF CATHOLIC SCHOOLS (i.e. BOYS', GIRLS', AND COEDUCATIONAL) DIFFER?

This study of 24 Catholic secondary schools, comprising eight Boys' schools, eight Girl's schools and eight Coeducational schools, revealed interesting and significant differences between each of the school types. Amongst the different types of schools, differences were reported for Collaboration, Competition, Teacher Authority, Teacher Support, Teacher Directedness and Gender Equity.

When comparing single-sex schools to coeducational schools, the present study revealed differences for Collaboration, Teacher Support and Teacher Directedness only. These differences are, in general, consistent with the findings of Trickett, Trickett, Castro and Schaffner's (1982) study of single-sex schools and coeducational private schools in the United States. Their study reported significant differences

between single-sex and coeducational classrooms in six of the nine classroom environment scales (viz. Student Involvement, Affiliation, Task Orientation, Competition, Order and Organisation, and Teacher Control). For all of these scales, the single-sex schools scored higher than the coeducational schools. Research concluded that compared with coeducational schools, single-sex schools were more concerned with discipline and control (Dale, 1969, 1971, 1974; Feather, 1974).

Amid the lists of strategies embraced by people concerned with boys' education, there have also been experiments with single-sex classrooms for boys. These are often led by enthusiastic male teachers who often wrote in glowing terms about the potential of such arrangements (Lillico, 2002; Townsend, 2002). While preliminary results appear very positive, it seems likely that this success may be short term rather than long term. The experience of single-sex classes for girls showed that the presence of a supportive community of teachers, parents and the students themselves was an essential part of the success of these initiatives (Gill, 2004). If having single-sex classes emerges as a useful device for securing community commitment, then it is worth considering, but the results must not be read as having been directly caused by the single-sex context on its own (Gill, 2004). It is also worth noting that the vast majority of new schools established in Australia are set up along coeducational lines (Gill, 2004).

A German study investigating the influence of school type on achievement and attitude, found that overall the similarities between boys' achievement and attitude were far greater than any differences. On the basis of this evidence, the researchers challenged the idea that boys are any better off in coeducation (Holz-Ebeling, Gratz-Tummers & Schwarz, 2000). Other German studies revealed that girls who had been taught in single-sex classes in science for one year exhibited more favourable attitudes to science than did those who had experienced only coeducation, whereas boys' attitudes appeared unaffected by either type of class experience (Kessels, Hannover & Jantzke, 2002; Rost & Pruisken, 2000).

Schneider and Coutt's (1982) study of environment in Catholic schools in Ontario, Canada, is important because Catholic schools in Ontario have similar characteristics to Australian Catholic schools. They are government funded up to year 10 in a similar

way to Australian Catholic schools, and they educate a significant proportion of Ontario's student population. Schneider and Coutt's found coeducational schools to have greater Student Affiliation and Pleasure but less emphasis on control and discipline than single sex schools. The study concluded that the coeducational school students provided a considerably more favourable description of the social psychological environment of their classrooms than did the single-sex school students.

The results of Schneider and Coutt's (1982) were consistent with those of the present study which found that students perceived classrooms in Catholic single-sex boys' schools to have less Teacher Support and Collaboration than coeducational classroom environments. The results of the present study were however, inconsistent with those of Schneider and Coutts (1982) in that it revealed single-sex girls' schools had greater Collaboration and less Teacher Directedness than coeducational schools. This present study found no significant difference between single-sex and coeducational schools with respect to Teacher Authority where as Schneider and Coutts (1982) reported a greater level of control and discipline in a single-sex school. Such discrepancies may in fact be influenced by gender rather than school types.

The National Foundation for Educational Research in England examined the effect of school type on academic performance, and found that even after controlling for students' academic ability and other background factors, both girls and boys performed significantly better in single-sex schools than in coeducational schools. The benefits were greater and more consistent across the board for girls than boys (Spielhofer, O'Donnell, Benton, Schagen & Schagen, 2002). Girls at single-sex schools outperform boys in single-sex schools and girls in coeducational schools (Finn, 1980; Riordan, 1990).

In an Australian study conducted by the Australian Council for Educational Research, it was identified that both boys and girls who were educated in single-sex classrooms outperformed, were better behaved and found learning more enjoyable and relevant than boys and girls in coeducational classrooms (Dean, 1998). The study also concluded that coeducational settings are limited in their capacity to accommodate large differences in cognitive, social and development growth rates of boys and girls aged between 12 and 16 (Dean, 1998).

The present study yielded further interesting results when the classroom environments of eight boys' and eight girls' schools were compared. A clear pattern of statistically significant differences in scale scores were observed with girls' schools having higher Collaboration, Teacher Support and Gender Equity, with less Competition and Teacher Authority than boys' schools. These results are consistent with Flynn's (1993) research which concluded that, compared to boys' schools, girls' schools held a significantly more favourable perceptions of student morale, relationships with teachers, attitudes to discipline and attitudes to the school Principal.

Rennie and Parker (1996) also found in their research that single-sex girls' classes had high levels of Cooperation and Participation than single-sex boys' classes. Sinclair and Fraser (2002) asserted that perceptions and preferences of male and female students are typically different. This assertion was consistent with the findings of Owens and Barnes (1982) and Wong and Fraser (1994). The present study supports the assertion made by Sinclair and Fraser (2002), with single-sex boys' classes and single-sex girls' classes differing significantly in five of the eight classroom environment scales used. American research identified that for boys, single-sex schools may be more likely to provide male role models, and consequently may provide an effective remedy in communities where boys suffer from high drop out rates, low academic performance, truancy and violence (Datnow, Hubbard & Woody, 2001). Studies have pointed to other positive outcomes from single-sex education for both boys and girls, such as improved reading levels, less sex-stereotyped course taking patterns, more time spent on homework and higher educational aspirations (Haag, 2000).

The comparison of the classroom environment of boys' and girls' schools brings into focus the frame of reference issue in using perceptual measures of the environment. Questions are raised as to whether the results are due to genuinely differing perceptions by boys and girls or whether they have different frames of reference. This matter has been raised by Brekelmans, Van den Eeden, Terwel and Wubbels (1994), Gill (1996), and Hilderbrand (1996). Because of its importance to the comparison of boys' and girls' perception in coeducational classes, it is discussed in Section 6.9 where gender and school type are examined.

Within the Australian educational setting it must be noted that most primary education is coeducational, whereas at state level there exists a greater variation in secondary education. Traditionally, Independent and Catholic secondary schools are single-sex. However, recent changes have seen more schools in these systems become coeducational (Ryan, 2004). Most government secondary schools are coeducational except for some selective schools, primarily in New South Wales. Over two thirds of Australian school children currently experience all their schooling in a coeducational setting (Gill, 2004). Australian research reviewed by Gill (1987) reported that, in general, a coeducational school environment was seen as more desirable and in keeping with an Australian context. A feature in discussions of single-sex schooling compared with coeducation, is that there is much more attention to the secondary context as opposed to the primary or elementary context. This is despite the fact that children in primary school do readily pick up understandings of gender appropriate behaviour and the need to conform to gender bounded norms (Gill, 1988). While in recent years there has been an increase in the number of non-government schools being established, and concerns raised about the 'drift' away from government schools, it remains the case that most Australian students begin their school days in coeducational schools. A relatively small proportion of them move to single-sex schools for their secondary education with the majority staying in coeducation schools (Gill, 2004). Table 6.1 shows the increase in number of students in non-government school students between 1985 and 1995, as well as the percentage of students in primary and secondary in single-sex schools in the non-government sector. It also reveals that there has been a decline in the percentage of students attending single-sex schools within this time.

Table 6.2 details the number of single-sex secondary schools in Australia in 2002. There are no government single-sex schools in Queensland. It should be noted that nearly 60% of the single-sex secondary schools in Queensland are Catholic secondary schools. Table 6.2 also shows that, with the exception of Victoria and the Northern Territory, Catholic schools provide at least 50% of all of the single-sex schools.

TABLE 6.1

NUMBER OF STUDENTS IN NON-GOVERNMENT SCHOOLS IN 1985 AND 1995

School Type	1985			1995		
	% Primary	% Secondary	% Total	% Primary	% Secondary	% Total
Single-sex	8.6	54.8	30.7	6.9	43.3	24.2
Male	6.1	27.3	16.2	3.6	20.7	11.7
Female	2.5	27.5	14.5	3.3	22.6	12.5
Coeducational	91.4	45.2	69.3	93.1	56.7	75.8
Total	100	100	100	100	100	100

Source: Australian Bureau of Statistics (1997), Australian Social Trends, p.72

The present study examined students' perceptions of their classroom environment in coeducational, boys' and girls' Catholic secondary schools and identified a number of differences. In light of the trends both in Australia and internationally, and the results of the present study, it is evident that the debate regarding school type, including students' perceptions and outcomes, warrants ongoing investigation.

TABLE 6.2

NUMBER OF SINGLE SEX SECONDARY SCHOOLS IN AUSTRALIA IN 2002

	Government Boys	Government Girls	Non- Government Boys	Non- Government Girls	Catholic Boys	Catholic Girls	Total
ACT	-	-	1	1	2	2	6
NSW	22	24	13	22	30	31	142
QLD	-	-	10	16	11	23	60
TAS	1	2	2	5	6	9	25
VIC	1	1	1	2	1	2	8
WA	-	8	12	21	13	23	77
NT	24	-	7	5	2	5	43
TOTAL	48	35	46	72	65	95	361

Source: Compiled from Department of Education and Training (DEST) Statistics, 2002.

6.5 TO WHAT EXTENT DO MULTICULTURAL CLASSROOM ENVIRONMENTS OF RELIGION AND STUDY OF RELIGION CLASSES IN CATHOLIC SCHOOLS DIFFER?

In comparing the classroom learning environments of Religion and Study of Religion classes three points must be noted. First, Study of Religion is only studied in years 11 and 12 in Queensland Catholic secondary schools. Although students in years 8, 10 and 12 from 24 Catholic secondary schools participated in the present study, only year 12 student perceptions were investigated for both Religion and Study of Religion classes. Second, all students in the schools investigated were required to study either Religion or Study of Religion. Third, Study of Religion is a Queensland Studies Authority (QSA) subject and contributes to a student's Overall

Position (OP) whereas Religion is not a Queensland Studies Authority subject and therefore does not contribute to a student's Overall Position (OP).

The comparison of the classroom environments in Religion and Study of Religion classes revealed that students perceive these classes in very similar ways. In fact, the present study revealed a significant difference for only one scale, Gender Equity. Students in Study of Religion classes perceived greater Gender Equity in their classroom compared with students in Religion classes. This result may be attributed to the fact that the 2001 Study of Religion syllabus suggested the use of a variety of approaches for the delivery of the subject, including sociological, feminist, historical, phenomenological and typological approaches (QSA Study of Religion Senior Syllabus, 2001). This is in contrast to the previous Study of Religion syllabus document, which recommended using only a phenomenological approach (Goldburg, 2001). This phenomenological approach is also predominantly used in the teaching of Religion. Approaching the Study of Religion subject through the lens of feminism allows students, not only to work dialogically, but also critique the subject with new sensitivities (Goldburg, 2001).

The 2001 Study of Religion syllabus also requires schools to employ Educational Equity when teaching the subject. In developing work programs from this syllabus, schools are urged to consider the most appropriate means of incorporating equity, including areas such as language, subject matter, assessment and equal opportunities (QSA, Study of Religion Syllabus, 2001). Such an approach is more evident in Study of Religion than in Religion. The results of the present study support the impact of Educational Equity in Study of Religion.

This difference on only one scale, Gender Equity, for Religion compared to Study of Religion classes, suggests that whilst Study of Religion does contribute to a student's Overall Position (OP) and Religion does not, there is a level of academic rigour to both subjects so that students perceive a comparable level of importance to both subjects. A study conducted by Malone (1995) in Australian schools revealed that the majority of students considered that as a result of studying Study of Religion they had a different understanding and appreciation of other groups within their society. The results of the present study support this finding. However, the findings of the present

study are not consistent with other recent research into Religion classes in Catholic schools. Flynn (1993) concluded that year twelve students in New South Wales did not take Religion seriously. Dorman (1994) concluded that Religion classes had a lower level of task orientation than science classes and so reinforced the view that Religion (or Religious Education - RE) is not considered to be very important by some students (Dorman, 1994).

There are a number of possible explanations as to why the results of the present study are not consistent with the work of Flynn (1993) and Dorman (1994). The first would focus on the issue that Study of Religion currently taught in Queensland secondary schools uses the 2001 Study of Religion syllabus, whereas, at the time of Dorman's study in 1994, an earlier syllabus document would have been used. The 2001 syllabus document suggests the use of several methodological approaches, whereas earlier syllabus documents recommended using only a phenomenological approach (Goldburg, 2001). The 2001 syllabus document has contributed to an increase in the academic rigour of Study of Religion and to some extent Religion. In fact in 2003 many schools had replaced Religion with Religion and Ethics. This new version of Religion was a Study Area Specification subject from the Queensland Studies Authority and reflected a more analytical view of religion than did the previous spiritually focused religion course (Ryan, 2001). Consequently pedagogy and assessment issues were more similar between Religion and Study of Religion classes than was previously the case.

A second explanation for the similarity in the environment in Religion and Study of Religion classes was due to the fact that in a number of schools surveyed, only Study of Religion was offered, whilst in other schools a large number of students studied Study of Religion rather than Religion in order to maintain their Overall Position (OP) eligibility. The reasons why these situations existed were due to particular school issues, however, an outcome of this was that there were some students in Study of Religion classes because of issues outside their control. This may have contributed to the lack of differences between the two subjects.

Little Australian research has investigated the different environments in various secondary school subjects. Dorman (1994) identified differences between science

classes and religion classes for Task Orientation only. Previous research in America has shown classroom environments vary with subject matter (Anderson, 1971; Hearn & Moos, 1978; Tamir & Caridin, 1993). Some of these differences have been shown to occur between mathematics and science orientated subjects and humanity subjects. Using the Learning Environment Inventory (LEI: Anderson, 1971), Anderson (1971) found that high school subjects differ on Friction, Favouritism, Formality, Disorganisation, Apathy and Goal Direction. More recently investigations into classroom learning environments of science, mathematics, computing and language classes have been conducted (Margianti, Fraser & Aldridge, 2001; Read & Waxman, 2001; Treagust, 2003). It must be noted that as result of the introduction of Study of Religion and more recently, Religion and Ethics, into the year 12 curriculum by the Queensland Studies Authority, there is a closer content, pedagogical and assessment similarity between the two subjects. This similarity is reinforced by the results of the present study. Previous investigations into comparisons of subjects have generally involved subjects which are significantly different. It may be beneficial to undertake further research comparing Religion and Study of Religion with other subjects.

6.6 TO WHAT EXTENT ARE THE DIFFERENCES BETWEEN MULTICULTURAL CLASSROOM ENVIRONMENTS IN RELIGION AND STUDY OF RELIGION CLASSES SIMILAR FOR BOYS', GIRLS, AND COEDUCATIONAL CATHOLIC SCHOOLS?

This section will expand on the discussion in Section 6.5. However, it will examine further the effects of school type (i.e. boys', girls', coeducational) on students' perceptions in Religion and Study of Religion classes. It should again be noted that only the perceptions of year 12 students are used in the analysis of this research question for the same reasons outlined in Section 6.5.

The comparison of the classroom environments in Religion and Study of Religion classes across the different school types in the present study revealed that there were no significant differences. Irrespective of school type, the present study indicated that

there was no significant difference between the students' perception of Religion and Study of Religion classes. The issues outlined in Section 6.5, including the similarity of content, pedagogy and assessment between Religion and Study of Religion, coupled with significant revamping of the Religious Education curriculum by Catholic Education authorities, impact on all schools, irrespective of type. (Goldburg, 2001; Goldburg & Ryan, 2001; Malone, 1995)

Figure 5.4 in Chapter 5 illustrate small differences in mean scores for each multicultural learning environment scale across each school type. Figure 5.6 depicts the mean scores for each school type for Religion, whilst Figure 5.7 shows the mean scores for each school type for Study of Religion. Whilst the statistical analysis reveals that there are no significant differences between school type and subject type some small differences in mean scores are worth noting.

For Religion classes, the boys' schools had the highest means for Competition, Teacher Authority, Teacher Support, Congruence and Deference. Conversely they had the lowest means for Collaboration and Gender Equity. Girls' schools demonstrated the highest mean for Collaboration and the lowest mean for Teacher Authority, Teacher Support, Congruence, Deference and Teacher Directedness. Finally, the coeducational classes had the highest means for Gender Equity and Teacher Directedness. These results are consistent with earlier results discussed in Section 6.4 where differences in school type were examined without any consideration to subject type. They are also consistent with previous research (Dean, 1998; Gill, 2004; Riordan, 1990; Sax, 2005; Trickett, Trickett, Castro & Schaffner, 1982).

For the Study of Religion classes, the boys' schools had the highest means for Competition, Teacher Authority and Deference. Conversely they had the lowest means for Collaboration, Teacher Support, Congruence, Gender Equity and Teacher Directedness. Girls' schools demonstrated the highest mean for Collaboration, Congruence, Teacher Directedness and Gender Equity and the lowest for Teacher Authority. Finally, the coeducational schools had the highest mean for Teacher Support and the lowest mean for Deference and Competition. Such findings support previous assertions by DeSouza (1999), Goldburg (2001), and Ryan (1999).

As already reported in Section 6.5, the only significant difference between Religion and Study of Religion was for the Gender Equity scale, whilst Section 6.6 reported that there were no significant differences between Religion and Study of Religion classes for boys', girls' and coeducational schools. Despite these findings, Figure 5.6 and 5.7 report some differences in means across the different school types. These small differences in mean scores are consistent with previous studies (Schneider & Coutts, 1982) and support recent changes in the Study of Religion and Religion curriculum in Queensland Catholic secondary schools.

6.7 TO WHAT EXTENT DO MULTICULTURAL CLASSROOM ENVIRONMENTS OF YEARS 8, 10 AND 12 CLASSES IN CATHOLIC SCHOOLS DIFFER?

In comparing students' perceptions of their classroom environments in years 8, 10 and 12, three significant differences were identified in the present study. First, the comparison of years 8, 10 and 12 classes showed that, compared to year 10 students, year 8 students perceived their classroom environments to have greater Collaboration, Teacher Support, Congruence, Deference, Teacher Directedness and Gender Equity, but lower Competition. Secondly, in comparing year 8 and year 12 classes, it was revealed that compared to year 12 students, year 8 students perceived their classroom environments to have greater Collaboration, Congruence and Deference, but lower Competition and Teacher Authority. Finally in comparing year 10 and 12 classes, it was revealed that compared to year 10 students, year 12 students perceived their classroom environments as having greater Competition.

These results are generally consistent with previous studies on the effects of year level on classroom environment (Docker, Fraser & Fisher, 1989; Dorman, 1994; Randhawa & Michayluh, 1975; Shaw & Mackinnon, 1973; Welch, 1979; Weinburgh, 1994). Radhawa and Michayluh (1975) reported a consistent pattern of reduced year 11 class scores compared to year 8 on dimensions of the Learning Environment Inventory (Fraser, Anderson & Walberg, 1982). Shaw and Mackinnon (1973) showed that, as

year level increased, Formality, Favouritism and Goal Direction decreased while Democracy increased. Welch (1979) showed that junior high school students perceived their classes as having less Satisfaction and Democracy but more Disorganisation, Formality, Friction, Cliqueness and Favouritism compared to high school students. Docker, Fraser and Fisher (1989) showed that elementary school students perceived a more favourable classroom environment than students in high schools on all seven dimensions. Weinburgh (1994) reported that student perceptions of their classroom environments became less positive as year level increased. Finally, Dorman (1994) reported that year 12 students perceived their classroom environments to have greater Student Affiliation, Teacher-Student Interaction, Cooperation, Order and Organisation and Individualisation, but lower Task Orientation and Teacher Control compared with year 9 students.

Overall, these previous studies showed that as year level increased, Cooperation and Order and Organisation increased, but Task Orientation and Teacher Control decreased. The results of the present study support these findings. However, the results identified in the present study pertaining to Collaboration and Competition are inconsistent with those reported by Dorman (1994), Randhawa and Michayluk (1975), and Welch (1979). Previous research into year level differences in Deference and Congruence has not been reported.

A possible criticism of comparing environments in years 8, 10 and 12 classes is that there is the potential that the empirical results may overestimate the differences between the various year levels. This overestimation may be due to the fact that in Queensland, students in year 8 are in their first year of secondary schooling after transition from primary school. That is, students entering year 8 may have a 'honeymoon' perception of secondary schooling which may alter by the time students enter year 10. This criticism is rejected because in recent years educational changes incorporating middle schooling have been introduced into Queensland schools. Important goals of middle schooling include engagement of adolescents, effective teaching and organisational practices, and genuine partnerships and long term support (Barratt, 1998; Cumming, 1998). The middle schooling concept, amongst other issues, attempts to create a seamless transition from primary to secondary year levels. Literature pertaining to middle schooling emphasises a number of issues including,

the fact that young adolescents have unique needs, that ‘middle schooling’ refers more to a particular type of pedagogy and curriculum rather than a particular type of school structure, and that setting up middle schools does not guarantee that middle schooling will take place (Chadbourne, 2001). There has been an increase in the number of schools that have a P-12 or 5-12 structure. In 2004, there were 21 Catholic schools that operated with a P – 12 or 5 – 12 type structure, whereas in 1994 there were only 16 such schools (Queensland Catholic Education Commission, 2004).

This increase, along with the creation of a ‘Middle Phase of Learning’ (years 6, 7, 8, 9) as part of the Education Training Reforms for the Future (2002) introduced by the Queensland government, support the value of a seamless transition from primary to secondary schooling. However, in 2004, there were 22 Catholic schools that operated with a P – 12 or 5 – 12 type structure, whereas in 1994 there were only 14 such schools (Queensland Catholic Education Commission, 2004).

A second reason contributing to possible overestimation of differences between year levels is that for students in Queensland years 8 and 10 are compulsory and year 12 is post compulsory. That is, students who might recall negative perceptions of the environment leave school before year 12. This criticism is rejected because in Queensland, the post-compulsory retention rate is very high. According to Wiltshire, McMeniman and Tolhurst (1994), Queensland has the highest Australian school retention rate. For Catholic schools in Queensland, the retention rate has continued to rise over the last decade and was 90.3% in 2004 (Queensland Catholic Education Commission, 2004).

The present study has identified that students have different perceptions at various stages of secondary schooling. This brings into focus the issue of providing learning environments that meet the needs of adolescents at particular stages of maturity. The establishment of senior colleges for the post-compulsory years of education (years 11 and 12 only) is one approach. Fraser, Williamson and Tobin (1987) and Docker, Fraser and Fisher (1989) outlined advantages and characteristics of such senior colleges. Research in the late 1980’s (Cranston & Rose, 1987; Dalglish, 1988) and the review of school curriculum (Wiltshire et al., 1994) recommended the retention of such senior colleges. However, since the early 1990s Queensland Catholic Education authorities have dismantled or amalgamated many of these senior colleges. More

recently an increase in the number of P-12 schools has occurred. This trend is evidenced by Brisbane Catholic Education who has opened five new schools in the last five years, four of which were P – 12 schools (Brisbane Catholic Education, 2004). These P-12 or in some cases years 5 - 12 schools, along with the introduction of purpose built middle schools (years 6, 7, 8, 9), have been an attempt to provide learning environments to meet the needs of students.

In November 2002 the Queensland Government (2002) released the White Paper - Education and Training Reforms for the Future. This paper was the product of previous reports by a variety of educational researchers including the Pitman Report (2002) and the Gardiner Report (2002) and resulted in the creation of Queensland Government's (2002) The Education and Training Reforms for the Future Report, and the subsequent introduction of the Queensland Government's (2003) Youth Participation in Education and Training Act. Amongst the initiatives outlined in these reports was the creation of three Phases of Learning – Early, Middle and Senior. The Middle Phase of Learning incorporates years 6, 7, 8 and 9, whilst the Senior Phase of Learning includes years 10, 11 and 12. Further initiatives included the formation of Senior Education and Training Plans (SET plans) for year 10 students to transition into years 11 and 12, improved quality of vocational education and training (VET), and the creation of a new and more flexible senior certificate, to be known as the Queensland Certificate of Education. The Queensland Government's (2002) The Education and Training Reforms for the Future and the subsequent legislative and policy initiatives were introduced to address the issue of providing appropriate learning environments for adolescents.

The present study and the research cited above indicated significant differences between lower secondary and upper secondary year levels. The present study also indicated a significant similarity of perceptions of learning environments of year 10 and year 12 students. The creation of a Senior Phase of Learning that incorporates years 10, 11 and 12 would be seen as addressing these perceptions. A desirable aim of any educational system should be the creation of a classroom environment that meets the psychosocial needs of students (Dorman, 1994).

6.8 TO WHAT EXTENT ARE THE DIFFERENCES BETWEEN MULTICULTURAL CLASSROOM ENVIRONMENTS IN YEARS 8, 10, AND 12 SIMILAR FOR BOYS', GIRLS', AND COEDUCATIONAL CATHOLIC SCHOOLS?

In Section 1.2.2 it was noted that this particular research question would be subdivided into associated sub-questions where boys', girls' and coeducational Catholic schools would be investigated individually with respect to the students' perceptions in years 8, 10 and 12. The results of the present study were reported using the sub-questions in Sections 5.3.7.1, 5.3.7.2 and 5.3.7.3. However the discussion of the results cited in the above sections will be addressed according to the scales used in the present study. This approach has been taken because the results from the present study comparing students' perceptions of their classroom environment at different year levels across the three school types were very similar. Therefore the justification or explanation of the results from the present study will be similar for each of the sub-questions and previous research would be relevant to each school type. Any particular differences between school type and year level will also be discussed in this section using the scales as the criteria.

The comparison of years 8, 10 and 12 classes showed that, compared to year 10 students, year 8 students perceived their classroom environments to have greater Collaboration and Congruence, but lower Teacher Authority across all three school types (i.e. boys', girls' and coeducational). A similar comparison was identified between year 8 and year 12 classes across all three school types. These findings are consistent with the findings identified in Section 5.3.5 and the discussions in Section 6.3.5. In particular the present study supports the findings identified by Weinburgh (1994), where she asserted that as year levels increased, there was a decreasing of positiveness in students' perception of their classroom environment and an increase in Teacher Authority. The study by Waxman and Huang (1997) investigated student perceptions in elementary, middle and high schools in the United States and found that students in elementary schools perceived greater levels of Affiliation, Rule Clarity and Student Aspiration compared to students in middle school or high school classes. These findings are consistent with the present study.

Hattie, Byrne and Fraser (1986) investigated student perceptions in years 7, 9 and 11 classes in New South Wales. It is to be noted that students in years 7, 9 and 11 classes in New South Wales are of a similar age and have experienced a similar number of years in secondary school as students in years 8, 10 and 12 in Queensland schools. Hattie et al (1986) found that year 7 students preferred greater Structure and Cohesiveness compared to year 9 and 11 students, where as year 9 students preferred greater Competitiveness and Friction compared to year 7 students. These findings are consistent with those reported in the present study. As identified in Section 6.3.5, the findings of the present study, irrespective of school type, are inconsistent with some of the findings of Dorman (1994) and Randhawa and Michayluk (1975) with respect to Collaboration and Competition. Hattie et al. also found that year 11 students preferred to be involved in a cohesive network, which is somewhat inconsistent with the findings of the present study. Hattie et al. however, also asserted that year 11 students demonstrated the highest preference for Personalization, Participation and Independence. This is consistent with the findings of the present study which found that the students' perception of Competition in their classroom environment increased as the year level increased.

Within secondary schools, group work, as a pedagogical practice, involves relatively more intimate interaction with well known individuals (Cantwell & Andrews, 1998). Students in the earlier years of secondary school, despite preferring a more collaborative classroom environment, find this group work pedagogy more difficult (Cantwell, 1998). Middle schooling, in fostering genuine partnerships and long term support, helps address this issue (Barrett, 1998).

The present study has identified that there is very little difference in students' perceptions of the classroom environment in years 10 and 12 irrespective of school type. From this information it may be interpreted that, in general, students in Queensland Catholic secondary schools in year 10 and 12 have a similar perception of their classroom environment irrespective of their school type (i.e. boys', girls' and coeducational). The highest incidence of student alienation, disengagement, disruptive behaviour, boredom and disenchantment occur during the first years of secondary school (Australian Curriculum Studies Association, 1996; Hargraves, Earl & Ryan, 1996; Hill & Rowe, 1998). The findings of the present study support this assertion in

so far as there are differences in the perceptions of students in year 8 compared with students in years 10 and 12, whilst students in years 10 and 12 have very similar perceptions. The high retention rate from year 10 to year 12 in Queensland Catholic schools (90%) supports the argument that the majority of students in year 10 progress to year 12 and therefore supports the similarity in perceptions between students in years 10 and 12 indicated in the present study. Dorman (1994) asserted that a desirable aim for any educational system was the creation of classroom environments that meet the psychosocial needs of students. The similarity of student perceptions of their classroom environment in years 10 and 12, irrespective of school type, strongly supports the recent Queensland government initiative, Education and Training Reforms for the Future (2002). The creation of a Senior Phase of Learning which incorporates years 10, 11 and 12 is of particular relevance to the present study. Furthermore, the creation of Senior Education and Training Plans (SET plans) by all year 10 students as part of their transition into the Senior Phase of Learning, is seen to be a positive initiative based on the findings of the present study. Such initiatives are for all students, irrespective of attending coeducational, boys' or girls' schools.

The present study also identified that in boys' and girls' schools, year 12 students perceived their classroom environments to have greater Competition than students in year 8. A similar finding was not evident in coeducational classes. This was, in general, consistent with the findings of Trickett, Trickett, Castro and Schaftner's (1982) study of single-sex and coeducational private schools in the United States. Their study reported, amongst other findings, that single-sex schools have higher levels of Competition than coeducational schools. Although their study did not examine specific year levels, as did the present study, the findings of Trickett et al. support the findings of the present study.

Furthermore, the present study is consistent with the research of Schneider and Coutts (1982) which found that coeducational school students provided a considerably more favourable description of the psychosocial environment of their classrooms than did single-sex school students. Schneider and Coutts asserted that coeducational schools have greater Student Affiliation and Pleasure (i.e. less competition) than single-sex schools. This is consistent with the findings of the present study.

Students undergoing formal education are often seen to move through five developmental stages: early childhood, middle childhood, early adolescence, late adolescence/young adulthood and adulthood (Curriculum Council, 1998). The middle years then, are located in the middle of middle childhood and late adolescence/young adulthood (Chadbourne, 2001). The findings of the present study, in asserting that differences in perceptions of classroom environments exist between students in year 8 and students in years 10 and 12, and the similarity of perceptions of students in years 10 and 12, are supportive of this developmental model. The findings of the present study also support a number of the changes recently introduced into the Queensland education system. It is however, suggested that further research be conducted to investigate the effects of the recent changes or issues such as student transition, middle schooling and the senior curriculum.

6.9 TO WHAT EXTENT DO THE MULTICULTURAL CLASSROOM ENVIRONMENTS IN CATHOLIC SCHOOLS DIFFER FOR MALE AND FEMALE STUDENTS?

In Section 1.2.2 it was noted that the comparison of male and female students' perceptions of their classroom environments be subdivided into three associated sub-questions where coeducational and single-sex schools were examined individually, and finally a comparison of male and female perceptions made irrespective of school type. The results of the present study were reported using the three sub-questions in Sections 5.3.8.1, 5.3.8.2 and 5.3.8.3. Therefore, the discussion of the results reported in the sections cited above, will be organised and addressed according to the individual sub-questions. Section 6.9.1 discusses the results pertaining to the perceptions of male and female students in coeducational classroom environments. Section 6.9.2 examines the results of the perceptions of male and female students in single-sex classroom environments. Finally, Section 6.9.3 details the discussions related to the perceptions of male and female students in their classroom environment, irrespective of school type.

6.9.1 Comparison of the Perceptions of Male and Female Students in Coeducational Classroom Environments

The comparison of male and female students' perceptions of their classroom environment in the same coeducational classes, showed that boys perceived greater Competition and Teacher Authority than girls. The present study also reported that girls perceived greater Collaboration, Teacher Support and Gender Equity compared to boys.

These results were consistent with Dorman's (1994) study which involved a sample of 2,211 students from 64 secondary coeducational classrooms in Queensland. Using a seven scale instrument, Dorman found significant differences between boys' and girls' scores for Interaction, Cooperation, Task Orientation, Individualisation and Teacher Control. More specifically Dorman identified that compared to boys, girls perceived the classroom to have significantly higher levels of Interaction, Cooperation, Task Orientation and Teacher Control but lower levels of Individualisation. The results of the present study are consistent with Dorman's findings.

Similarly, the results of the present study are consistent with Lawrenz's (1987) study which involved 58 secondary schools in Arizona. Using five scales from the Learning Environment Inventory (LEI: Anderson, 1971; Anderson, Walberg and Fraser, 1982), Lawrenz found that compared to boys, girls perceived greater Cohesiveness, Satisfaction, Difficulty and Competition, but less Friction in the classroom. Wong and Fraser (1994) used a modified version of the Science Laboratory Environment Inventory (SLEI; Fraser, McRobbie and Giddings, 1993; Giddings & Fraser, 1990) to reveal that female students held more favourable perceptions of chemistry classes in Singapore high schools than male students. A study conducted by Sadker and Sadker (1995) reported that teachers spend more time disciplining boys in coeducational classes and much less time disciplining girls. They argued that greater emphasis should be placed on improving coeducational classes so that boys and girls attracted equal attention. Other studies indicated that boys did better in competitive environments, while girls preferred smaller, cooperative settings (Ryan, 2004). The results of the present study support these assertions.

The pattern of gender differences identified in the present study is similar to those of Owens (1985) and Owens and Straton (1980). These studies revealed that girls perceived a classroom characterised by Cooperation whereas boys preferred more Individualisation and Competition in the classroom. Hilderbrand (1996), investigating single-sex classes in coeducational schools identified that girls perceived their single-sex classes more positively than mixed coeducational classes. Parker and Rennie (1987) used the Science Laboratory Environment Inventory (SLEI: Fraser, McRobbie and Giddings, 1993; Giddings & Fraser, 1990) and identified that female students in single-sex classes perceived a higher level of Participation, Interaction and Cooperation compared to females in a mixed coeducational class. This is consistent with the findings of the present study. They also found that boys' perceptions of their classroom environments were similar in both single-sex and coeducational classes. Further research identified that single-sex classroom format in coeducational schools was remarkably effective at boosting boys' performance, particularly in English and foreign languages, as well as improving girls' performance in mathematics and science (Sax, 2005).

The results of the present study indicate that the perceptions of male and female students differ in coeducational classes, and so highlights the significance for teachers, in coeducational schools, to be aware of this fact.

6.9.2 Comparison of the Perceptions of Male and Female Students in Single-Sex Classroom Environments

The present study, in comparing the perceptions of boys' and girls' perceptions of classroom environments in single-sex classes, revealed that boys perceived greater Competition and Teacher Authority than girls. It also identified that girls perceived greater Collaboration, Teacher Support and Gender Equity compared to boys. These results are the same as those identified for students in coeducational classes. They are consistent with Dorman's (1994) study where he identified that girls perceived their classroom to have significantly higher levels of Interaction, Cooperation, Task Orientation and Teacher Control and lower levels of Individualisation compared with boys. Similarly, the results of the present study are consistent with other research

undertaken by Wong and Fraser (1994), Lawrenz (1987), Owens (1985) and Owens and Straton (1980).

The results from the present study are also consistent with the findings of Joiner, Malone and Haines (2002). Their research focused on an examination of students' perceptions of their classroom environment at the Australian Defence Academy and employed the College and University Classroom Environment Inventory (CUCEI: Fraser and Treagust, 1986). Joiner Malone and Haines asserted that compared to boys, girls perceived significantly higher levels of Cohesion, Satisfaction and Personalisation. They also asserted that girls valued the interaction with teacher and with students more than boys. The present study, in asserting that girls perceived their classroom environments to have greater Collaboration, Teacher Support and Gender Equity and less Competition and Teacher Authority compared to boys, is consistent with the findings of Joiner, Malone and Haines (2002).

The work by Rennie and Parker (1996) provided findings that were both consistent and inconsistent with the present study. Rennie and Parker developed two separate questionnaires to ascertain students' perceptions of their classroom environment. The first questionnaire covered the dimensions of gender inclusiveness identified from the literature review, and was administered to 1,107 male and 979 female secondary school students in Western Australia. They found that compared to boys, girls perceived more Participation and Extroversion and less Teacher Help. The higher level of Participation is inconsistent with the findings of the present study.

Rennie and Parker (1996) created a second questionnaire which utilised data gathered from the first questionnaire. Questionnaire Two was administered to 822 male and 795 female secondary students in Western Australia, and identified that compared to boys, girls perceived more Harassment, Student Support and Attentiveness but less Teacher Interaction and Teacher Relation. Again these results were both consistent and inconsistent with the findings of the present study. The higher Student Support, Attentiveness and lower Teacher Interaction perceived by girls was consistent with the present study. However, girls perceiving low Teacher Relation was inconsistent with the findings of the present study, which identified that female students perceived higher levels of Teacher Support in their classroom environment compared to male students.

Girls at single-sex schools were more likely to take non-traditional courses, such as maths and physics (Ormerod, 1975). Other research conducted in Australia concluded that girls' schools are helping to counter, rather than reinforce, the distinction between 'girls' subjects, such as English and foreign languages and 'boys' subjects, such as physics and computer science. No such effects were seen to be apparent for boys in single-sex schools (Schielopher, O'Donnell, Benton, Schagen & Schagen, 2002). However, research has indicated that single-sex schools break down gender stereotyping (Buie, 2000; Richards & James, 2003).

6.9.3 Comparison of the Perceptions of Male and Female Students in Classroom Environments Irrespective of School Type

As well as examining male and female perception in their classroom environment in single-sex and coeducational classes, the present study also examined the differences in perceptions of male and female students, irrespective of their classroom type (i.e. boys', girls' and coeducational). The present study found that, irrespective of school type, girls, in comparison to boys, perceived their classroom environment as having higher levels of Collaboration, Teacher Support and Gender Equity and lower levels of Competition, Teacher Authority and Deference. These findings were the same as the findings for both coeducational schools and single sex-schools, with the minor exception of Deference. These results further confirm a definite pattern of differences in the perceptions of classroom environments held by male and female students.

The result from the present study is consistent with the research conducted by Sinclair and Fraser (2002). They developed the Elementary and Middle School Inventory of Classroom Environments (ICE; Sinclair & Fraser, 2002) and administrated it to 359 male and 386 female students in 43 classes in North Texas. The Elementary and Middle School Inventory of Classroom Environment (ICE) is based on the What is Happening in this Classroom? (WIHIC) Questionnaire (Aldridge & Fraser, 1999; Fraser & Chionh, 1998; Fraser, Fisher & McRobbie, 1996). They assessed Cooperation, Teacher Empathy, Involvement and Task Orientation as their classroom environment scales and reported that overall, female students perceived a more positive environment than male students. Similar findings have been previously

reported by Byrne, Hattie and Fraser (1986), Fraser, Giddings and McRobbie (1995), Owens and Straton (1980), and Teh and Fraser (1994). Specifically, they asserted that compared to males, females perceived their classroom environment as having higher levels of Cooperation and Teacher Empathy. These findings were consistent with those of the present study which identified female students perceived higher levels of Collaboration, Teacher Support and Gender Equity compared to male students. The findings from the present study, that male students perceived higher levels of Competition and Teacher Authority in their classroom environments compared to female students, was not substantiated by Sinclair and Fraser's (2002) study. However, their assertion that male and female students perceived the classroom environment differently is consistent with the overall findings of the present study.

In Australia and internationally there has been a ground swell of public opinion about the role of females and males in society. Issues involving questions of leadership in the community, equity in employment, work roles and also gender roles in schools have been raised (Ryan, 2004). Teese, Davies, Charlton and Polesel (1995) argued that the complexity of the issues pertaining to schools were further intensified by consideration of factors such as subject choice and subject selection and perception associated with gender stereotypes. They found that whilst subjects with the greatest vocational potential attracted boys, girls encountered a strongly segmented curriculum that weakened their competitive chances of entering certain courses at tertiary level. Teese et al. added that girls tended to choose subjects with less coherence such as Biology and Humanities rather than mutually supporting subjects such as Mathematics and Physics. Furthermore, they asserted that subject choice might account for gender differences in academic achievement. Gender was found to be one of the student characteristics accounting for the greatest proportion of variation in student enrolment in various subjects (Fullarton & Ainley, 2000; Gallagher, 2001). Thus, the role of school subjects provided and selected by students in perpetuating gender differences also needs to be considered.

A significant methodological issue regarding the comparison of single-sex with coeducational classes, or the effect of gender differences, is the frame of reference issue which suggests that boys and girls have different standards in assessing their learning environments (Brekelmans, van den Eeden, Terwels & Wubbels, 1994). In

sociological terms, it is a question of the lived experience or school culture. The frame of reference issue suggests that cultural norms and values influence the perceptions of males and females differently. The literature on gender construction in educational practice raises significant issues dealing with classroom treatments: issues that relate to and go beyond the question of gender (Gill, 1996).

Some of the factors involved in the gender frame of reference issue include dominance, power, subservience, sex stereo-typing and the power discussions embedded in the wider society (Jones, 1989; Scott, 1984; Sarah, Scott & Spender, 1980).

Within the general understanding of the role of the school in constructing gender, the question of the impact of school gender context, (whether the school is coeducational or single-sex), raises some very particular issues. While some see single-sex schools as “the most fundamental expression of differing sex expectations” (Commonwealth Schools Commission, 1975, p. 63), others argue that such schools offer young people the freedom to be themselves, unhampered by societal expectations of gender conformity (Gill, 2004). Prominent educational publicist Dale Spender wrote:

When girls are educated in a context from which boys are absent, in which they are encouraged to grow and develop their human potential, then they will be in a much stronger position to resist oppression in the wider society.

(Spender, 1980, p. 65)

Further research into the issue of gender frame of reference is necessary. The use of quantitative information may not be sufficient to adequately examine this issue. It may in fact be necessary to employ additional qualitative data collection methods (eg. observations, interviews) to assist in addressing issues where a frame of reference issue is suspected. Other issues that may be worth considering in future environment research involving gender, could include class gender composition (i.e. boy to girl ratio) (Brekelmans et al., 1994), role modelling by teachers (Gill, 1996), teacher gender (Lawrenz, 1987), subject type (Brekelmans et al., 1994; Henderson, Fisher & Fraser, 1995), and pedagogical practices (Joiner, Malone & Haines, 2002).

6.10 CHAPTER SUMMARY

This chapter has discussed the results of the present study by drawing on Australian Catholic schooling and multicultural literature, and previous learning environment research. This discussion has developed 12 conclusions about multicultural classroom environments in Queensland Catholic secondary schools. First, when considering the country of birth of the students, differences in students' perceptions existed for Competition, Collaboration, Congruence and Deference scales. Second, when considering the father's country of birth, differences in students' perceptions existed for Collaboration, Deference, Teacher Directedness and Gender Equity scales. Third, when considering the mother's country of birth, differences in students' perceptions existed for Collaboration, Competition and Teacher Equity scales. The increasing cultural diversity of Queensland Catholic schools necessitates further investigation into factors such as student and teacher cultural backgrounds, the issue of acculturation, the cultural composition of the classes and the family's cultural background.

Fourth, Catholic girls' schools were perceived generally to have a more positive classroom environment compared to Catholic boys' schools. Fifth, compared to coeducational schools, single-sex schools were more concerned with discipline and control.

Sixth, students perceived the classroom environment of Religion and Study of Religion classes as very similar, with the exception of Gender Equity. Seventh, the similar perceptions of Religion and Study of Religion classes is the same irrespective of school type (i.e. Boys', Girls' and Coeducational).

Eighth, there were differences in students' perceptions of their classroom environments as year level increased. There was a closer similarity in students' perceptions between year 10 and year 12 classes than existed between either year 8 and year 10 or year 8 and year 12 classes. This supports the recent Queensland Government education initiative in the creation of a Senior Phase of Learning (years 10,11,12) and a Middle Phase of Learning (years 6,7,8,9) which form part of the Education and Training Reforms for the Future (2002). Ninth, there was very little difference in students' perceptions of classroom environments between years 10 and

12 students, irrespective of school type. However, students in coeducational schools perceive greater Collaboration than students in single-sex schools when comparing year 8 to year 12 classes.

Tenth, girls perceive their coeducational classes more favourably than boys in the same classes. Eleventh, for boys' and girls' perceptions of classroom environments in single-sex classes, it was revealed that boys perceived greater Competition and Teacher Authority than girls, whilst girls perceived greater Collaboration, Teacher Support and Gender Equity compared to boys. Twelfth, irrespective of school type, girls perceived their classroom environments more positively with greater Collaboration, Teacher Support and Gender Equity and less Competition and Teacher Authority. A frame of reference issue was raised in relation to the different classroom environment perceptions of boys and girls. The frame of reference issue suggests that cultural norms and values influence the perceptions of male and female students differently.

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 considering briefly 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. The implications focus on four areas: Queensland Catholic secondary schools, multicultural education in Catholic schools, methodology in learning environment research and future learning environment research. Section 7.3 provides a number of recommendations from the study whilst Section 7.4 summarises these recommendations. Finally, Section 7.5 addresses the limitations of the study. Section 7.6 details some concluding remarks.

7.2 SUMMARY OF THE STUDY

The critical focus of this study was that an increasing cultural diversity within Catholic schools needed to be investigated when considering the distinctive psychosocial learning environments in Catholic schools. Literature from a diverse range of sources suggested that relationships and community are key aspects of Catholic schools, and the need for inclusiveness continues to be critical in the philosophical underpinnings of Catholic education. Previous empirical studies have not investigated adequately the multicultural psychosocial environments of Queensland Catholic schools. Accordingly, the purpose of this study was to conceptualise, assess and investigate the multicultural classroom environments of

Queensland Catholic secondary schools. As a result, a series of research questions were formulated and are detailed in Section 1.2.2.

A research methodology based on three principles was developed for the study. These principles required, first, the use of key stakeholders' perceptions to assess classroom learning environments. Second, the use of quantitative data collection methods and third, the development of an instrument for the assessment of multicultural classroom environments in Queensland Catholic secondary schools.

A three stage research program was used to manage the study. Stage 1 was to ascertain from stakeholders (i.e. students, parents and teachers) key aspects of multicultural classroom environments with the view of developing an appropriate context-specific instrument. A pilot instrument was developed, administered and refinements made in Stage 2. The final version of the Multicultural Classroom Environment Instrument (MCEI) was administered to a sample of Queensland Catholic secondary schools in Stage 3. Statistical analyses (mainly multivariate analysis of variance and some non-parametric analyses) were performed on the quantitative data collected in Stage 3. Results from the analyses of the data were discussed in the light of Catholic school literature, multicultural education perspectives and previous learning environment research.

Notwithstanding the importance of the results reported in Chapter 5 and discussed in Chapter 6, there are seven major patterns to the findings. First, when considering the country of birth of students, differences in students' perceptions of their classroom environment existed for Competition, Collaboration, Congruence and Deference scales. Second, when considering the father's country of birth, differences in students' perceptions of their classroom environment existed for Collaboration, Deference, Teacher Directedness and Gender Equity scales. Third, when considering the mother's country of birth, differences in students' perceptions existed for Collaboration, Competition and Teacher Authority scales. Fourth, compared to coeducational schools, single-sex schools had higher levels of Competition and Teacher Authority. Fifth, students perceived the classroom environments of Religion and Study of Religion as very similar irrespective of school type (i.e. Boys', Girls', Coeducational). Sixth, there were differences in students' perceptions of their

classroom environments as year level increased, with Year 10 and Year 12 students having more similar perceptions than that of Years 8 and 10 or Years 8 and 12 students, irrespective of school type. Seventh, girls generally perceived their classroom environment more positively than boys with greater Collaboration, Teacher Support and Gender Equity and less Competition and Teacher Authority.

7.3 IMPLICATIONS OF THE STUDY

In the previous chapter, the research questions were discussed in the light of Catholic education literature, multicultural education literature and previous learning environment research. The purpose of the present section is to highlight the key implications of this study for Catholic education and suggest methodological and substantive directions for future learning environment research. Whereas the discussion in Chapter 6 dealt with the research questions in a largely isolated fashion, this section attempts to synthesise the findings to form series of recommendations. There has been no attempt to include all of the findings in this synthesis. Rather, an emphasis is 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 Queensland Catholic Secondary Schools

In the last decade, a significant amount of research has been undertaken on students' perceptions of their classroom environment and its effect on student outcomes and achievement. The classroom remains central to the environment of Catholic schools. The majority of students' time at school is spent in the formal classroom and this is where the affective and cognitive growth needs to be nurtured. With the increasing cultural diversity experienced in contemporary Catholic schools priority needs to be given to study and research into the inclusiveness of Catholic schools and their classroom environments. Therefore, it is recommended that preservice, staff professional development, staff retreats and future research in Catholic schools should

include a focus on the inclusiveness of multicultural classroom environments in Catholic schools (*Recommendation 1*).

The classroom environment instrument used in the present study, known as the Multicultural Classroom Environment Instrument (MCEI), was developed specifically to investigate students' perceptions of multicultural classroom environments in Queensland Catholic secondary schools. The validity and applicability of this instrument has been documented in earlier chapters of this thesis. Therefore, researchers and teachers wishing to learn more about, and improve the multicultural classroom environments of Catholic schools should use the instrument developed in this study (*Recommendation 2*). Inservice work in Catholic schools could focus on the classroom environments of Catholic schools, and the use of the instrument developed for the present study to improve these environments as advocated by Docker, Fraser, and Fisher (1988), and Fraser and Fisher (1986).

The results of this study showed two distinct findings with respect to students' perceptions of their classroom environment and their year level. The first was that year 10 and year 12 students have similar perceptions of their classroom environment. The second was that the perceptions of year 8 students were significantly different to the perceptions of both year 10 and year 12 students. These findings firstly suggest that it may be beneficial in linking the curriculum of years 10, 11 and 12 more closely. Accordingly, research should be conducted into the effects of the Senior Phase of Learning on student outcomes. As indicated in this thesis (Section 6.3.5), the Queensland government has initiated The Education Training and Reforms for the Future Report (2002) and the subsequent Legislative changes in 2003. As part of these initiatives a Middle Phase and Senior Phase of Learning have been established. The present study identified significant differences in the perceptions of students in year 8 compared to years 10 and 12 students and also a similarity in the perceptions of students in year 10 and year 12. Therefore it is recommended that research should be conducted into the transition of students from the Middle Phase of Learning to the Senior Phase of Learning in Queensland Catholic secondary schools (*Recommendation 3*). This research should examine the classroom environments of students in years 10, 11 and 12, comparing them to year 8 classroom environments,

examine the effects of the recent educational and legislative changes and over time, examine the effects of the Senior Phase of Learning initiatives on students' outcomes in year 12, and finally examine the transition from the Middle Phase of Learning to the Senior Phase of Learning.

This study also found that the perceptions of Year 8 students are different to that of either year 10 or year 12 students. In Queensland Catholic schools, students enter secondary school at year 8. However, in recent years there has been an increasing awareness by schools and school authorities to prepare or transition students into secondary school from primary school. The creation of a Middle Schooling concept has been based on a variety of criteria, including curriculum, physical structure of classrooms and buildings, pedagogical practices and teacher contact. Therefore, it is recommended that further research be conducted into the effects of Middle Schooling in Queensland Catholic schools on student outcomes (*Recommendation 4*). Again this recommendation is consistent with the Queensland government's Educational Training and Reforms for the Future (2002) initiatives which advocate the creation of a Middle Phase of Learning that encompasses years 6,7,8, and 9. This research should examine the effects of the Middle Schooling curriculum and pedagogy on students' perceptions of their classroom environment, their learning outcomes and its effect in preparing them for their Senior Phase of Learning.

This study has revealed that there are clear similarities in students' perceptions of their Religion and Study of Religion classrooms. It is recommended that inservice courses on the teaching of Religion should focus on the dynamics of Religion and Study of Religion classes so that a full range of possible teaching strategies are explored (*Recommendation 5*).

7.3.2 Implications for Multicultural Education in Queensland Catholic Schools

Catholic schools are becoming increasingly culturally diverse (Queensland Catholic Education Commission, 2004). This cultural diversity is expected to increase, particularly in Catholic schools in South East Queensland as migrant and refugee

population growth continues (Brisbane Catholic Education, 2004). From the present study it is evident that students from different cultural backgrounds have different perceptions of their classroom environments. The issue of inclusiveness is central to the Mission of Catholic education and so it is imperative that, as the cultural diversity within Catholic schools continues to increase, teachers become more aware of its effects, and the appropriate pedagogical practices that must be employed to successfully address it in their classrooms. Therefore, it is recommended that teacher preservice courses and professional development programs for teachers should include a focus on the effects of students' cultural backgrounds on learning, and the appropriate pedagogical practices to facilitate culturally sensitive teacher education and student learning (*Recommendation 6*). Thomas (2000), Dhindsa and Fraser (2003), and Marjoribanks (2003) have all advocated the importance of teacher understanding of the cultural diversity in their classrooms and the need for culturally sensitive teacher education.

With the increasing culturally diversity evident in Queensland Catholic schools it is not only important to examine the effects of students' cultural background on learning outcomes, but also to consider the combinations of different cultural backgrounds that exist within a classroom environment and what effect they have on students' outcomes. Therefore, it is recommended that within Queensland Catholic schools the effect of cultural combinations within a class be examined (*Recommendation 7*). The examination of cultural combinations within a class may be of assistance in preservice programs, but would provide most assistance to teachers as part of professional development programs or post graduate studies.

7.3.3 Implications For Methodology in Learning Environment Research

Some studies have investigated the relative merits of different procedures for assessing classroom environments (e.g. Fiedler, 1975; Kaye, Trickett & Quinlan, 1976). Further studies examining the validity of different ways of assessing classroom environments are needed. Because the philosophical position adopted for this study was to define the classroom environment solely in terms of the perceptions of the

milieu inhabitants, the data collection techniques available for this study were limited. As the field of learning environment research is dominated by perceptual measures, it is critical that the validity of perceptual measures be checked in as many settings as possible. Without these checks, the field leaves itself open to criticism that its validity is based on the distant past rather than the present. Also, recent learning environment literature (e.g. Dorman, 2001; Fraser, 1989; Fraser & Tobin, 1991; Fraser, Williamson & Lake, 1988; Templeton & Jensen, 1993; Tobin & Fraser, 1995; Williamson & Bow, 2002; and Wilson, 2003) suggests that there is value in utilising both quantitative and qualitative data collection methods. Quantitative data can provide breadth of enquiry by establishing generally applicable results, whilst qualitative data can provide depth of understanding by focusing on explanation and interpretation. It is recommended that further studies investigate the validity of different approaches to assessing learning environments (*Recommendation 8*).

7.3.4 Suggested Substantive Directions for Future Learning Environment Research

The volume of research conducted into the learning environments of Australian Catholic schools remains small in comparison to comparable research conducted in Government schools in Australia and overseas (see Fraser, 1986). Despite the recent research conducted by researchers such as Aldridge and Fraser (2000), Dorman (1994, 2001, 2002), Marjoribanks (2004), Mok and Flynn (2002) and Waldrup and Fisher (1998), only a small amount of learning environment research is conducted in Australian Catholic schools, and an even smaller amount in Queensland Catholic schools. Based on the research reported in this thesis, the following are recommendations for future learning environment research, particularly in the Queensland Catholic secondary school setting.

The present study identified that students perceived the classroom environments of Religion and Study of Religion classes as very similar. Despite some research undertaken by Dorman (1994), Read and Waxman (2001), Margianti, Fraser and Aldridge (2001), and Treagust (2003) to compare the classroom environments of different subjects, limited research has been undertaken to compare Religion and

Study of Religion with other subjects. Therefore, it is recommended that further research, comparing the classroom environments of Religion and Study of Religion with other subjects, be undertaken in Queensland Catholic secondary schools. (*Recommendation 9*). This research may be of particular interest because many teachers of Religion are in fact trained in other disciplines, and teach Religion because of either their own Catholicity or have undertaken some professional development courses. This is despite the fact that most Queensland Catholic Education Authorities now require certification To Teach Religion in a Catholic School.

Additionally, the impact of preservice education courses on the quality of the teaching of Religion and Study of Religion should be investigated. The Australian Catholic University (ACU) is the only Queensland University that includes theology, biblical studies and the teaching and learning of Religion as part of its undergraduate teacher education programs. Given the importance of the classroom environment in promoting the distinctiveness of Catholic schools (Flynn, 1985, 1993) it is therefore recommended that research should be conducted to investigate classroom environments in Religion in Queensland Catholic secondary schools, comparing the environment in Religion classes taught by Australian Catholic University graduates to that of graduates from other universities (*Recommendation 10*).

As part of this study, significant investigation was made into examining the effect of culture on students' perception of their classroom environment. Evidence from the present study and previous studies by researchers such as Dhindsa and Fraser (2003), and Jegede and Okebukola (1988) suggest that the cultural background of a student does affect their perceptions of their classroom learning environment. These perceptions have the potential to affect the students' learning outcomes and achievement (Fraser, 1986). It is also evident from this study and from previous research, that ethnicity is an extremely complex issue and many explanations have been provided for its association with students' perceptions of their learning environment (Levy, den Brok, Wubbels & Brekelmans, 2003). The present study has only examined a small gamete of the cultural variable influence. It is therefore appropriate to advocate further and more extensive research involving the influence of culture and cultural background on classroom environment perceptions.

The present study examined the effects of the student's country of birth and their parents' country of birth on classroom environment perceptions. Mok and Flynn (2002) and Marjoribanks (2003) found that family background and home environment influenced students' perceptions of their classroom environment, their outcomes and achievement. Therefore, it is recommended that further studies be undertaken to specifically examine the effects of family-home environment on students' perceptions of their classroom environment and its influence on achievement (*Recommendation 11*).

As the cultural diversity of Catholic schools continues to increase, it is reasonable to assume that the cultural diversity of the teachers will also alter. Fraser & Dhindsa (2003) asserted that the students' perception of their classroom environment is not only influenced by their own cultural background but also by the cultural background of their teachers. Similar assertions have been made by overseas researchers such as Au and Blake (2003), Heath (1983), and Levy, Wubbels & Breklemans (1996). However, research investigating the influence of teacher cultural background in Australian Catholic schools has been limited. It is therefore recommended that research should be conducted in Australian Catholic schools to investigate the influence of the teachers' cultural background on students' perceptions of their classroom environment and the effect of this on students' outcomes and achievements (*Recommendation 12*).

Although cultural diversity is increasing in Queensland Catholic schools, it is also true to assert that the classroom environments in Queensland Catholic secondary schools have been culturally diverse for many years. The range of cultures and numbers of students from the different cultures has altered over the years. The number of first, second and even third generation migrant students has also increased. Levy, den Brok, Wubbels & Breklemans (2003) asserted that as the residency for students from different cultural backgrounds in the United States of America increased, their perceptions of their classroom environments changed, and in fact their perceptions became increasingly similar to those of students born in the United States. Evans and Fisher (2000) concurred with this fact and claimed that acculturation was important in influencing students' perceptions. They also asserted that students who lived longer in a particular country had different perceptions than those who had just arrived.

However, research into the effects of acculturation has mainly had an overseas focus. Therefore, it is recommended that research should be undertaken to examine the effects of acculturation on students' perceptions of their classroom environment in Queensland Catholic secondary schools (*Recommendation 13*).

Furthermore, it is also recommended that further study should be conducted to examine the differences in classroom environment perceptions of first, second and third generation migrant students in Australian Catholic schools (*Recommendation 14*).

Another useful direction of research to complement and extend the present study, is the investigation of classroom environments in different Australian Independent secondary schools. Such schools would have different philosophical and religious underpinnings to that of Catholic schools examined in the present study. For example, investigating Lutheran, Anglican, Christian and Grammar schools, which have differences in fee structures, religious values, entrance criteria and governance structures to that of Catholic schools, may provide parents with information and choices. It may also give an insight into whether different philosophical underpinnings influence students' perceptions of their classroom environment. The increase in cultural diversity evident in Queensland Catholic schools is also evident in other Independent schools in Queensland. In 2004, there were 70 Independent schools catering for nearly 2000 Overseas students (Association of Independent Schools in Queensland, 2004). It is therefore recommended that research be conducted into a range of Queensland Independent schools to ascertain the classroom environment perceptions of students from different cultural backgrounds in these schools (*Recommendation 15*). This research may then be used as a comparison to the findings of the present study to identify similarities and differences in students' perceptions across a range of school types.

The present study investigated the perceptions of male and female students and asserted that in fact male and female students do perceive their classroom environments differently. The present study also asserted that differences in perceptions of male and female students also existed in different types of schools (i.e. Boys', Girls', Coeducational). Similar findings have been made previously by

researchers such as Hilberbrand (1996), Parker and Rennie (1996) and Sinclair and Fraser (2000). Research into coeducational versus single-sex education has been undertaken extensively over the last decade, and has concluded that differences in students' perceptions have been shown to exist in different types of schools. Breklemans, Van den Eeden, Terwel and Wubbels (1994) also asserted that the gender composition of a class affects students' perceptions. However, very little research of this type has been conducted in Australian Catholic schools. Therefore, it is recommended that further study should be conducted into the effects of gender composition of classes on students' perceptions, outcomes and achievements in Australian Catholic secondary schools (*Recommendation 16*). Such research would not only advance previous research into the single-sex and coeducational debate, but also allow further investigation into the effect of male to female student ratio in classroom environments.

It was identified in the present study that there were differences in students' perceptions of their classroom environment regarding Gender Equity. It was also identified that students from different cultural backgrounds perceived different levels of Gender Equity in their classroom environments. The role of males and females in various cultures differs and these differences may influence students' perceptions and outcomes. Previous researchers (Benz, Pfeiffer & Newman, 1981; Brophy & Good, 1986; Lawrenz & Welch, 1983; Twoli & Power, 1989) have asserted that the gender of the teacher also influences students' perceptions. However, research into this area in the Australian setting is minimal, particularly in Australian Catholic schools. Therefore, it is recommended that further study examining the effect of teacher gender on students' perceptions of their classroom environment be conducted in Australian Catholic schools (*Recommendation 17*). This recommendation has particular significance because in certain areas of teaching there exists an imbalance between the number of male and female teachers. Investigation into the effect of teacher gender may generate further debate in the recruitment of male and female teachers into certain areas and disciplines of teaching.

7.4 SUMMARY OF RECOMMENDATIONS

- Recommendation 1* Preservice, staff professional development, staff retreats and future research in Catholic schools should include a focus on the inclusiveness of multicultural classroom environments in Catholic schools.
- Recommendation 2* Teachers and researchers wishing to learn more about and improve the multicultural classroom learning environment of Catholic schools should use the instrument developed in this study.
- Recommendation 3* Research should be conducted into the transition from Middle Phase of Learning to the Senior Phase of Learning in Queensland Catholic schools.
- Recommendation 4* Research should be conducted into the effects of Middle Schooling in Queensland Catholic schools on student outcomes.
- Recommendation 5* Preservice and inservice courses on the teaching of Religion should focus on the dynamics of Religion and Study of Religion classes so that a full range of possible teaching strategies are employed.
- Recommendation 6* Preservice courses and professional development courses for teachers should include a focus on the effects of students' cultural backgrounds on learning and appropriate pedagogical practices to facilitate culturally sensitive teacher education and student learning.

- Recommendation 7* An examination should be conducted within Queensland Catholic secondary schools on the effects of cultural combinations within a class.
- Recommendation 8* Further studies investigate the validity of different approaches to assessing classroom learning environments.
- Recommendation 9* Further research comparing the classroom learning environments of Religion and Study of Religion with other subjects should be undertaken in Queensland Catholic schools.
- Recommendation 10* Further research should be conducted in Queensland Catholic secondary schools to investigate the environments of Religion classrooms taught by Australian Catholic University graduates compared to the environment in Religion classes taught by graduates from other Universities.
- Recommendation 11* Further study should be undertaken specifically examining the effect of family-home environments on students' perceptions of their classroom environment and its influence on achievement.
- Recommendation 12* Research should be conducted to investigate the influence of the teachers' cultural background on students' perceptions of their classroom environment and its effect on students' outcomes and achievements.
- Recommendation 13* Research should be conducted to examine the effects of acculturation on students' perceptions of their classroom environment in Queensland Catholic secondary schools.
- Recommendation 14* Research should be conducted to examine the differences in classroom environment perceptions of first, second and third generation migrant students in Australian Catholic schools.

Recommendation 15 Research should be conducted into the classroom environments of a range of Queensland Independent schools to ascertain perceptions of students from different cultural backgrounds.

Recommendation 16 Further study should be conducted into the effect of gender composition of classes on students' perceptions, outcomes and achievements in Australian Catholic secondary schools.

Recommendation 17 Further study should be conducted into the effect of teacher gender on students' perceptions on their classroom environment in Australian Catholic schools.

7.5 LIMITATIONS OF THE STUDY

The limitations of this study may be grouped into four broad categories: Methodological, Statistical, Variable Groupings and Administrative Issues. Each category of limitation will be examined in this section.

There are a number of methodological limitations to this study. First, the quantitative results are generalisable only to the particular school types, year levels, subjects and country of birth groupings from which the sample was drawn. The samples of schools used in the study were considered representative of the Catholic secondary schools in Queensland. Similarly, the students who participated in this study were also considered to be representative of students in Queensland Catholic secondary schools.

A second methodological issue limiting this study was that in employing perceptual measures it must also be acknowledged that perceptions do not necessarily equate to reality. It was argued in Chapter 3 that perceptual measures were important because individuals act on perceptions. The investigation into different approaches to assessing learning environments (see *Recommendation 8*) is appropriate because more knowledge is needed about the relationship between perceptions of inhabitants and the

perceptions of an external observer. The use of qualitative research data may assist in addressing this issue.

There were also a number of statistical limitations to this study. First, correlation analyses cannot be used to infer causality. The quantitative results of this study are generalisable only to Queensland, and perhaps, the Australian Catholic secondary school setting. Their worth will be assessed by replication and reference to similar studies. The conducting of a replication study examining the influence of cultural background on students' perceptions would be worthwhile in checking the original results (Good, 1992). A significant impediment to experimental studies is the identification of classrooms that would permit deliberate manipulation of the independent variables.

A second statistical limitation of this study is that quantitative results are limited by the assumptions about populations in multivariate analysis. Stevens (1992) states three assumptions of MANOVA. First, the observations of the dependent variables (classroom environment scales) follow a multivariate normal distribution in each group. Second, the population covariance matrices for the dependent variables in each group are equal, and third, the observations are independent. As far as possible in the present study, these conditions are met. For example, an equal number of school types (8 Boys', 8 Girls', 8 Coeducational) were used so satisfying the second condition. Also, the use of the individual mean as the Unit of Analysis for the classroom environment analysis satisfies the condition concerning the independence of observations.

However, satisfying the second condition of equal group size for the various cultural groups was not totally achieved. Because the assumptions of MANOVA were violated by having large disparity in group size amongst the various country of birth groupings, the inferential tests of ANOVA and MANOVA could not be used to analyse the data for some research questions. It was therefore necessary to employ non-parametric procedures to investigate the significance of differences between the various country of birth groupings.

The third category of limitations of the study was focused on the country of birth groupings. The creation of the eight particular country of birth groupings was not a random selection but rather was done to give a significant cross section of regions, to satisfy certain statistical assumptions and finally to group together similar countries or regions. Because of the large disparity in group size between some of the country of birth groups, non-parametric analyses were employed. However, some groups had a very small sample size and therefore needed to be grouped with other small sample size country of birth groups. For example, the Asian group was created as a result of the amalgamation of a number of smaller Asian countries. This was also the case for the Pacific Island group. The criterion of geographical similarity was used to create such groupings. The commonality of language was used to create the Spanish Speaking group. The artificiality of some of the county of birth groupings was limiting for this study. The replication of the study with a larger sample or the examination of specific individual regions within Asia or Pacific Islands in separate studies may assist in addressing this limitation.

The final category of limitation for this study was centred on administrative issues. The administrative procedures required by the Australian Catholic University for students under 18 years of age to participate in this study were complex and detailed. However, this issue was further magnified by the fact that the volume and complexity of language used in the Parent/Guardian Consent Form precluded some parents from certain cultural backgrounds from completing the forms. A pre-requisite of students participating in this study was a completed Parental Consent Form. A lack of language skills may have prevented some parents completing the necessary Consent Forms and may account for why there was some disparity in numbers from some country of birth groupings. This also raises some issues with respect to the randomness of the sample and the subsequent validity of the study. A possible solution to this limitation would be to create Consent Forms in various languages. This may allow a greater rate of participation of students from other cultural backgrounds where language may have been a barrier to completing the necessary forms.

7.6 CONCLUDING REMARKS

As schools are becoming increasingly diverse in their scope and clientele, an examination of the interaction of cultural variables with learning processes, assumes critical importance (Falk & Harris, 1983). Students' perceptions of their classroom environments are influenced by factors such as student cultural background (den Brok et al., 2002,2003; Dhindsa & Fraser, 2003; Levy et al., 2003; Levy, Wubbels & Breklemans, 1996; Waldrup, 1996), teacher cultural background (den Brok et al., 2002, 2003; Levy et al., 1996), acculturation (Evans & Fisher, 2000; Rickards, den Brok & Fisher, 2003) and family cultural environment (den Brok et al., 2003; Levy, Wubbels, Brekelmans & Morganfield, 1997). Such factors are influenced by the role of the school.

Garcia (1999), in examining the issue of culture and education, wrote:

A focus on ethnic studies alone is not sufficient for addressing the educational needs of culturally diverse students because it is too often based on stereotypes. Educators must instead adopt a broader sociocultural approach to language, culture and education. They must understand the child, the family and the community, the school, and the larger society.

(Garcia, 1999, p. 165)

Walberg (1991) identified nine educational productivity factors that influence student cognitive and affective learning (see Table 2.5). Waldrup and Giddings (1996) argued that an additional set of variables, under the broad heading of Culture should be included (see Figure 2.5). Schools, in educating students, should take into consideration this 'Cultural Aspect' if they are to maximise student learning.

The psychosocial environment of the classroom is of significant importance to the Catholic school. Relationships and community are critical in the philosophical underpinnings of Catholic education. Previous empirical studies have not investigated adequately the multicultural psychosocial environments of Queensland Catholic secondary schools.

The purpose of this study was to conceptualise, assess and investigate the multicultural classroom environments of Queensland Catholic secondary schools. The findings of this study indicate that students from different cultural backgrounds have different perceptions of their classroom environment across a number of different scales. The results also indicate that students' perceptions of their classroom environment vary across a range of independent variables including school type, year level, gender, subject and culture.

An important outcome of this study has been the development of an instrument, known as the Multicultural Classroom Environment Instrument (MCEI), to assess specific dimensions of classroom environments in Catholic schools. The instrument was developed specifically to investigate students' perceptions of multicultural classroom environments in Queensland Catholic secondary schools. However, as indicated in Recommendation 2, consistent with practices as advocated by Fraser, Docker and Fisher (1988), and Fraser and Fisher (1986), this instrument could facilitate further research in Catholic schools and assist teachers and administrators to improve their classroom environments

Australian society has shown increasing cultural diversity over the last 50 years (DIMIA, 2003). Accordingly, Catholic schools are becoming more culturally diverse (Queensland Catholic Education Commission, 2004). The increase in the number of migrant and refugee students in Catholic schools in South East Queensland is expected to contribute strongly to this cultural diversity (Brisbane Catholic Education, 2004). The issue of inclusiveness is central to the Mission of Catholic education. It is therefore imperative that, as cultural diversity increases, teachers, administrators and curriculum planners become more aware of this diversity and the appropriate pedagogical practices that must be employed to accommodate this increasing diversity. Thomas (2000), Dhindsa and Fraser (2003), and Marjoribanks (2003) have all advocated the importance of teachers understanding the cultural diversity of their classrooms and the need for culturally sensitive teacher education.

Evidence from this study and previous studies by researchers such as Dhindsa and Fraser (2003), and Jegede and Okebukola (1988) suggest that the student's cultural background does affect their perceptions of their classroom environment. These

perceptions have the potential to affect the students' learning outcomes and achievement (Fraser, 1986). Ethnicity is an extremely complex issue and many explanations have been provided for its association with students' perceptions of their classroom environment (Levy, den Brok, Wubbels & Brekelmans, 2003). Mok and Flynn (2002) and Marjoribanks (2003) also noted that family background and home environment influence students' perceptions of their classroom environment. The concepts of community and relationship are central to Catholic schools. As a consequence, it is imperative that teachers and administrators in Catholic schools be aware of the influence of the family – home environment on students' perceptions and achievements, and the importance that the home – school relationship plays in influencing students' perceptions and achievements.

Although culturally diversity in Queensland Catholic schools is increasing, it is also true to assert that this diversity has existed for many years. The issue of multi-generational migrant students and the concept of acculturation influence students' perceptions (Evans & Fraser, 2000; Levy, den Brok, Wubbels & Brekelmans, 2003). Teachers and administrators in Catholic schools need to be aware of such influences and their impact on students' perceptions and learning outcomes.

Catholic schools have made a great contribution to Australian education for over 130 years. In 2004, almost 19 % of all secondary school students in Queensland attended Catholic secondary schools. The document Congregation for Catholic Education: *The Catholic School on The Threshold of the Third Millennium* (1998) commented that “On the threshold of the third millennium education faces new challenges which are the result of new socio-political and cultural contexts” (p. 5). Australian society has diversified dramatically and schools are reflecting this diversification. The contemporary Catholic school must adapt to and accommodate such demands as well as maintaining, through the service of people, a place where the Spirit is incarnated and a place where Christ lives (Sultmann, 2004).

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APPENDICES

Appendix 1

Pilot Multicultural Classroom Environment Instrument (MCEI).

AUSTRALIAN CATHOLIC UNIVERSITY
**SURVEY ON PERCEPTIONS OF RELIGIONS EDUCATION
CLASSROOM ENVIRONMENT**

This questionnaire asks you to describe you and your perceptions of your Religions Education class.

This is not a test.

Your opinion is what is wanted.

There are no right or wrong answers.

All information is confidential and will not be used by your school or teachers.

Think about how well each statement describes how you feel about your classroom.
Draw a circle around

- 0 if you strongly disagree with the statement
- 1 if you disagree with the statement
- 2 if you neither disagree or agree with the statement or are not sure
- 3 if you agree with the statement
- 4 if you strongly agree with the statement

Before answering the questionnaire you are asked to complete the information below.

Year level _____ Subject _____

Gender _____

Country of Birth of Father _____

Country of Birth of Mother _____

Your Country of Birth _____

AUSTRALIAN CATHOLIC UNIVERSITY LIMITED A.CN 050 192660
McAULEY CAMPUS 53 PROSPECT ROAD MITCHELTON, QLD 4053 AUSTRALIA
PO BOX 247 EVERTON PARK QLD 4053 AUSTRALIA
TELEPHONE (61+7) 38557100 FACSIMILE (61+7) 38557105

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I like working in groups.	0	1	2	3	4
2	I feel that it is important for the class to work together.	0	1	2	3	4
3	I would rather decide what to do as a group than make a decision myself.	0	1	2	3	4
4	It is important for me to be involved in class discussions.	0	1	2	3	4
5	I like to work with other students.	0	1	2	3	4
6	I make friendships among the students in my class.	0	1	2	3	4
7	I help other class members who are having trouble with their work.	0	1	2	3	4
8	It concerns me if I don't do as well as other students.	0	1	2	3	4
9	It is very important that I do better than other students.	0	1	2	3	4
10	I like to compete against other students.	0	1	2	3	4
11	I worry if I don't perform as well as others.	0	1	2	3	4
12	I like to do my work better than other students in the class.	0	1	2	3	4
13	I like to know if I am doing better than other students.	0	1	2	3	4
14	I prefer to compete against other students rather than cooperate with them.	0	1	2	3	4
15	I like to ask the teacher questions that might be hard for them to answer.	0	1	2	3	4
16	I feel that I can challenge or question what the teacher says.	0	1	2	3	4
17	I like to question what the teacher tells me in class.	0	1	2	3	4
18	It is OK for me to disagree with the teacher.	0	1	2	3	4
19	It is OK for me to argue with the teacher.	0	1	2	3	4
20	I like the teacher to make the rules for the classroom.	0	1	2	3	4
21	I like the teacher to be strict.	0	1	2	3	4
22	It is important that the teacher takes a personal interest in me.	0	1	2	3	4
23	I like the teacher to help me when I have trouble with my work.	0	1	2	3	4
24	I like it when the teacher talks to me.	0	1	2	3	4

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
25	It is important for me that the teacher is interested in my progress.	0	1	2	3	4
26	It is important that the teacher moves around the class to help students.	0	1	2	3	4
27	It is important that the teacher is friendly to students.	0	1	2	3	4
28	It is important that the teacher is willing to forgive students.	0	1	2	3	4
29	What I learn at home helps me to do things at school.	0	1	2	3	4
30	What I learn at school helps me to do things at home.	0	1	2	3	4
31	I feel that ideas I learn at school are similar to those I learn at home.	0	1	2	3	4
32	What I learn in class agrees with what I learn at home.	0	1	2	3	4
33	What I learn in this class helps me at home.	0	1	2	3	4
34	I learn to do things at home differently to how I learn it at school.	0	1	2	3	4
35	My family helps me to learn things at home.	0	1	2	3	4
36	I try to say what the teacher wants me to say rather than give my own opinion.	0	1	2	3	4
37	I like to listen to what other students say before I answer a question.	0	1	2	3	4
38	I try to say what the class thinks rather than give my own opinion.	0	1	2	3	4
39	It is important to me that I am able to answer all the questions the teacher asks me.	0	1	2	3	4
40	It is important to me that I am able to give all the right answers to questions in class.	0	1	2	3	4
41	I like it when the teacher asks me to answer questions.	0	1	2	3	4
42	It is important that the teacher praises me when I answer questions.	0	1	2	3	4
43	It is important that all students are expected to do the same work.	0	1	2	3	4
44	It is important that students are allowed to work at their own speed.	0	1	2	3	4
45	It is important that students are allowed to choose activities and how they work in class.	0	1	2	3	4
46	It is important that the teacher decides what is done in class.	0	1	2	3	4
47	It is important that students who finish their work can move on to the next topic.	0	1	2	3	4
48	It is important that students get a say in what is done in class.	0	1	2	3	4
49	It is important that all students work in class the same way.	0	1	2	3	4

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
50	I like the teacher to show me what to do.	0	1	2	3	4
51	I like to learn by copying what the teacher shows me.					
52	I like to see how other students attempt their class work.	0	1	2	3	4
53	I like to have my teacher tell me how to work in class.	0	1	2	3	4
54	I like the teacher to set the class work to do each lesson.	0	1	2	3	4
55	I like the teacher to discuss topics rather than write information on the board.	0	1	2	3	4
56	I like class time to be silent individual student work rather than class discussions or practical activities.	0	1	2	3	4
57	I think that both females and males make excellent teachers.	0	1	2	3	4
58	I like being taught by both male and female teachers.	0	1	2	3	4
59	I feel that comments in class made my male and female students are equally important.	0	1	2	3	4
60	I feel that female teachers should be shown the same amount of respect as male teachers.	0	1	2	3	4
61	I feel that male students have the same ability as female student in all class activities.	0	1	2	3	4
62	The teacher gives as much attention to my questions as to other student's questions.	0	1	2	3	4
63	I am treated the same as other students in my class.	0	1	2	3	4

Pilot Instrument

Scale Allowances

<u>Scale</u>	<u>Items</u>
Collaboration	1, 2, 3, 4, 5, 6, 7,
Competition	8, 9, 10, 11, 12, 13, 14
Teacher Authority	15 – 21
Teacher Support	22 – 28
Congruence	29 – 35
Deference	36 – 42
Individualisation	43 – 49
Teacher Directedness	50 – 56
Gender Equity	57 - 63

Scoring of Items

Normal Scoring is	SD = 0;	D = 1;	N = 2;	A = 3;
SA = 4.				
Strongly	Strongly	Disagree	Neutral	Agree
Agree	Disagree			

Appendix 2

Final Multicultural Classroom Environment Instrument (MCEI)

AUSTRALIAN CATHOLIC UNIVERSITY
**SURVEY ON PERCEPTIONS OF RELIGIONS EDUCATION
CLASSROOM ENVIRONMENT**

This questionnaire asks you to describe you and your perceptions of your Religions Education class.

This is not a test.

Your opinion is what is wanted.

There are no right or wrong answers.

All information is confidential and will not be used by your school or teachers.

Think about how well each statement describes how you feel about your classroom.
Draw a circle around

- 0 if you strongly disagree with the statement
- 1 if you disagree with the statement
- 2 if you neither disagree or agree with the statement or are not sure
- 3 if you agree with the statement
- 4 if you strongly agree with the statement

Before answering the questionnaire you are asked to complete the information below.

Year level _____ Subject _____

Gender _____ Aboriginal/Torres Strait Islander YES / NO

Your Country of Birth _____

Country of Birth of Father _____

Country of Birth of Mother _____

AUSTRALIAN CATHOLIC UNIVERSITY LIMITED A.CN 050 192660
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PO BOX 247 EVERTON PARK QLD 4053 AUSTRALIA
TELEPHONE (61+7) 38557100 FACSIMILE (61+7) 38557105

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I like working in groups.	0	1	2	3	4
2	I feel that it is important for the class to work together.	0	1	2	3	4
3	I would rather decide what to do as a group than make a decision myself.	0	1	2	3	4
4	I like to co-operate with other students.	0	1	2	3	4
5	I like to work with other students.	0	1	2	3	4
6	I make friendships among the students in my class.	0	1	2	3	4
7	I help other students in the class who are having trouble with their work.	0	1	2	3	4
8	I enjoy group work.	0	1	2	3	4
9	It concerns me if I don't do as well as other students.	0	1	2	3	4
10	It is very important that I do better than other students.	0	1	2	3	4
11	I like to compete against other students.	0	1	2	3	4
12	I worry if I don't perform as well as other students.	0	1	2	3	4
13	I like to do my work better than other students in the class.	0	1	2	3	4
14	I like to know if I am doing better than other students.	0	1	2	3	4
15	I prefer to compete against other students rather than cooperate with them	0	1	2	3	4
16	I like to achieve better results than other students in the class.	0	1	2	3	4
17	I like to ask the teacher questions that might be hard for them to answer.	0	1	2	3	4
18	I feel that I can challenge or question what the teacher says.	0	1	2	3	4
19	I like to question what the teacher tells me in class.	0	1	2	3	4
20	It is OK for me to disagree with the teacher.	0	1	2	3	4
21	I like other students to question what the teacher says in class.	0	1	2	3	4
22	I like other students to question what the teacher says in class.	0	1	2	3	4
23	I like other students to challenge or question the teacher.	0	1	2	3	4
24	I like to ask the teacher difficult questions.	0	1	2	3	4

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
25	It is important that the teacher is interested in how I am performing in the class.	0	1	2	3	4
26	I like the teacher to help me when I have trouble with my work.	0	1	2	3	4
27	I like it when the teacher talks to me.	0	1	2	3	4
28	It is important for me that the teacher is interested in my progress.	0	1	2	3	4
29	It is important that the teacher moves around the class to help students.	0	1	2	3	4
30	It is important that the teacher is friendly to students.	0	1	2	3	4
31	It is important that the teacher is willing to give students a 'second chance'.	0	1	2	3	4
32	It is important that the teacher helps students with their work.	0	1	2	3	4
33	What I learn at home helps me to do things at school.	0	1	2	3	4
34	What I learn at school helps me to do things at home.	0	1	2	3	4
35	I feel that ideas I learn at school are similar to those I learn at home.	0	1	2	3	4
36	What I learn in class helps me at home.	0	1	2	3	4
37	What I learn in this class helps me at home.	0	1	2	3	4
38	Activities I learn at school help me to do activities at home.	0	1	2	3	4
39	My family helps me to learn things at home.	0	1	2	3	4
40	How I learn things at school is similar to how I learn things at home.	0	1	2	3	4
41	I try to say what the teacher wants me to say rather than give my own opinion.	0	1	2	3	4
42	I like to listen to what other students say before I answer a question.	0	1	2	3	4
43	I try to say what the class thinks rather than give my own opinion.	0	1	2	3	4
44	It is important to me that I am able to answer all the questions the teacher asks me.	0	1	2	3	4
45	It is important to me that I am able to give all the right answers to questions in class.	0	1	2	3	4
46	I like it when the teacher asks me to answer questions.	0	1	2	3	4
47	It is important that the teacher praises me when I answer questions.	0	1	2	3	4
48	It is important to me that I can correctly answer the questions in class.	0	1	2	3	4
49	I like the teacher to show me what to do.	0	1	2	3	4
50	I like to learn by copying what the teacher shows me.					

	ITEM	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
51	I like the teacher to organise the work for the class.	0	1	2	3	4
52	I like to have my teacher tell me how to work in class.	0	1	2	3	4
53	I like the teacher to set the work to do each lesson.	0	1	2	3	4
54	I like the teacher to have class discussions or practical activities rather than write information on the board.	0	1	2	3	4
55	I like class time to be individual student work rather than class discussions or practice activities.	0	1	2	3	4
56	I like the teacher to help me with the class work.	0	1	2	3	4
57	I think that both females and males make excellent teachers.	0	1	2	3	4
58	I like being taught by both males and female teachers.	0	1	2	3	4
59	I feel that comments in class made by male and female students are equally important.	0	1	2	3	4
60	I feel that male and female teachers should be given the same amount of respect.	0	1	2	3	4
61	I feel that male students have the same ability as female students in all class activities.	0	1	2	3	4
62	I like the teacher to give as much attention to my questions as other student's questions.	0	1	2	3	4
63	I like to be treated the same as other students in my class.	0	1	2	3	4
64	I like the teacher to listen to my questions.	0	1	2	3	4

Final Instrument

Scale Allowances

<u>Scale</u>	<u>Items</u>
Collaboration	1 – 8
Competition	9 – 16
Teacher Authority	17 – 24
Teacher Support	25 – 32
Congruence	33 – 40
Deference	41 – 48
Teacher Directedness	49 – 56
Gender Equity	57 - 64

Scoring of Items

Normal Scoring is	SD = 0;	D = 1;	N = 2;	A = 3;
SA = 4.				
Strongly	Strongly	Disagree	Neutral	Agree
Agree	Disagree			

Appendix 3

Human Research Ethics Committee Approval Form

Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

ORIGINAL

ACU National



Human Research Ethics Committee
Expedited Review
Approval Form

Principal Investigator/Supervisor: Dr. Jeffrey Dorman	Campus: Brisbane
Co-Investigators: A/P Allan Doring	Campus:
Student Researcher: Mr Michael Carroll	Campus: Brisbane

Ethics approval has been granted for the following project: A Study of Multicultural Classroom Environments in Catholic Schools
for the period: 18th September 2002 - 1st July 2003
Human Research Ethics Committee Register Number: Q2002.03-17

subject to the following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans (1999)*:

- (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;

and subject to the following special conditions being met, as stipulated by the Human Research Ethics Committee:

3.2 Research design and procedures

1.0 B.3.4.2 – data collection should not commence prior to ethical clearance by the HREC and nominated date will require amendment to reflect this.

3.4 Gathering, security, disposal of data; dissemination of results

1.0 In the personal details section, what is the meaning and purpose of the item headed "Subject" between "Year Level" and "Gender"?

2.0 At E2.1 and E2.2 – the storage location in the McAuley campus is to be specified.

3.0 The response to E.3 is to be changed; Instruments and files are not to be destroyed at the conclusion of the study; it is required that they be retained for a minimum of five years.

3.5 Confidentiality, anonymity, privacy

1.0 Participants are identifiable pupils in particular schools; they are not anonymous even though their answers to the questionnaire are de-identified. The response should be "Yes".

3.6 Information letter to participants

1.0 ACU letterhead is required; again it is incorrect to inform parents that participants are "anonymous" (see comment above). The sentence should read something like: "Completed questionnaires will not identify participants nor will researchers attempt to identify any participant."

3.7 Issues concerning consent (including consent forms)

- 1.0 D.4 – copies of letters of formal approval from Brisbane Catholic Education and principals of each school are to be provided to the HREC when they are available.
- 2.0 Please delete extraneous words in parentheses eg "or stipulate the deadline..." and the heading "sample standard consent form". Please use capital letters for the HREC.

The Principal Investigator / Supervisor is requested to note the following comments:

4.3 Project Particulars


1.0 This reviewer's copy had serious format errors in the heading of the instrument and the entry in box 3 for item 1.

4.8 Other ethical issues

1.0 Since the questionnaires will occupy some 45 minutes of classroom time, what arrangements are to be made for non-participating students?

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.

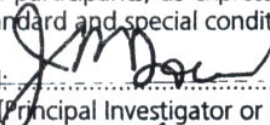
Signed:  CHAIR, HREC Date: 27/9/02
 (Chair, Expedited Review Panel, HREC)

TO BE COMPLETED BY THE PRINCIPAL INVESTIGATOR OR BY THE SUPERVISOR AND STUDENT RESEARCHER

The Principal Investigator, or the Supervisor and Student Researcher, are to sign, date and return this form to the local Research Services Officer. Evidence of compliance with any special conditions set by the HREC should be provided when the form is returned. Please note that data-collection must not commence until the stipulated special conditions have been met.

The date when I/we expect to commence contact with human participants or access their records is: 31/10/02

I/we hereby declare that I/we am/are aware of the principles and requirements governing research involving human participants, as expressed in the Human Research Ethics Committee's *Guidelines*, and I/we agree to the standard and special conditions (if applicable) stated above.

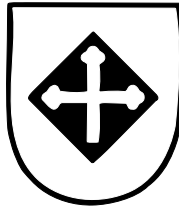
Signed:  Date: 8/10/02
 [Principal Investigator or Supervisor]

Signed: Michael Carroll Date: 9/10/02
 [Student Researcher]

TO BE COMPLETED BY THE CHAIR OF THE EXPEDITED REVIEW PANEL

I confirm that the special conditions stipulated by the HREC in relation to the commencement of data-collection have been met and that the conditions to be adhered to in the course of the project have been acknowledged by the researcher/s.

Signed: Date:



AUSTRALIAN CATHOLIC UNIVERSITY

INFORMATION LETTER TO PARTICIPANTS

TITLE OF PROJECT : A STUDY OF MULTICULTURAL CLASSROOM ENVIRONMENTS IN CATHOLIC SCHOOLS

NAME OF SUPERVISOR : Dr JEFFERY DORMAN

NAME OF STUDENT RESEARCHER : MR MICHAEL CARROLL

NAME OF PROGRAMME IN WHICH ENROLLED : Ph.D

Dear Parent/Guardians and Students,

The purpose of this letter is to firstly to inform you of a research project currently being conducted in a number of Catholic schools in Queensland and secondly to seek your support to participate in this research project. The research project is intended to investigate student's perceptions of their classroom environment. The research will use a questionnaire and students will be asked to rate certain aspects of their classroom environment.

There are no risks, inconvenience or discomfort to the participants of this research project. Confidentiality will be maintained during the study and in any report of the study. All participants will be given a code and names will not be retained with the data. Individual participants will not be able to be identified in any reports of the study as only aggregated data will be reported.

Participants will be asked to complete a questionnaire where they will rate aspects of their own classroom environment. The questionnaire will be administered during school time as part of one of the normal classes and will take about 45 minutes to complete.

The benefit of this research project will be to allow the participants an opportunity to examine the perceptions of their own classroom environment. On a larger scale, the research project will allow educationalists the opportunity to investigate student perceptions of classroom environments and introduce various curriculum and pedagogical initiatives based on these perceptions. In particular, it will allow researchers the opportunity to examine cultural differences in perceptions of classroom environments. The results of this research project will be published in the researcher's Ph.D thesis.

Appendix 4
Information Letter to Participants

- 2 -

AUSTRALIAN CATHOLIC UNIVERSITY LIMITED A.CN 050 192660
McAULEY CAMPUS 53 PROSPECT ROAD MITCHELTON, QLD 4053 AUSTRALIA
PO BOX 247 EVERTON PARK OLD 4053 AUSTRALIA
TELEPHONE (61+7) 38557100 FACSIMILE (61+7) 38557105

Please be assured that all participants are free to refuse consent or withdraw consent and discontinue participation in the study at any time without giving a reason or without prejudice.

Completed questionnaires will not identify participants nor will researchers attempt to identify any participants. Results will be published in the researcher's Ph.D thesis and there will be no identification of participants in this publication.

Any questions regarding this project should be directed to the Supervisor, Dr Jeffery Dorman, at the School of Education at the Australian Catholic University, McAuley Campus, 53 Prospect Road Mitchelton, Q 4053.

Any participants wishing to gain feedback on the results may contact the Supervisor, Dr Jeffery Dorman, to obtain such information.

The study has been approved by the *Human Research Ethics Committee* at the Australian Catholic University.

In the event you may have any complaint of concern about the way you have been treated during the study, or if you have any queries that the Investigator or Supervisor and Student Researcher 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 247
EVERTON PARK QLD 4053
Tel: 07 3855 7294
Fax: 07 3855 7328

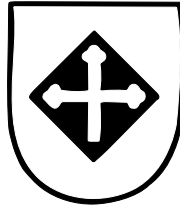
Any complaint or concern will be treated in confidence and fully investigated. The participant will be informed of the outcome.

If you agree to participate in this project, you should sign both copies of the Consent Form, retain one copy for your records and return the other copy to the Supervisor.

Thank you for your consideration of this request.

Yours sincerely,

Michael Carroll



AUSTRALIAN CATHOLIC UNIVERSITY

PARENT/GUARDIAN CONSENT FORM

(PARENT/GUARDIAN)

TITLE OF PROJECT: A STUDY OF MULTICULTURAL CLASSROOM ENVIRONMENT IN CATHOLIC SCHOOLS

NAME OF SUPERVISOR: Dr JEFFERY DORMAN

NAME OF STUDENT RESEARCHER : Mr MICHAEL CARROLL

I 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, realising that I can withdraw my consent at any time. 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 in any way.

NAME OF PARENT/GUARDIAN :
(block letters)

SIGNATUREDATE.....

NAME OF CHILD
(block letters)

SIGNATURE OF SUPERVISOR :

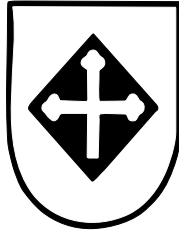
..... DATE:.....

SIGNATURE OF STUDENT RESEARCHER :

.....DATE:.....

Appendix 5

Consent Form



AUSTRALIAN CATHOLIC UNIVERSITY

PARENT/GUARDIAN CONSENT FORM

(RESEARCHER'S COPY)

TITLE OF PROJECT: A STUDY OF MULTICULTURAL CLASSROOM ENVIRONMENT IN CATHOLIC SCHOOLS

NAME OF SUPERVISOR: Dr JEFFERY DORMAN

NAME OF STUDENT RESEARCHER : Mr MICHAEL CARROLL

I 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, realising that I can withdraw my consent at any time. 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 in any way.

NAME OF PARENT/GUARDIAN :
(block letters)

SIGNATUREDATE.....

NAME OF CHILD
(block letters)

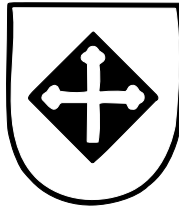
SIGNATURE OF SUPERVISOR :
DATE:.....

SIGNATURE OF STUDENT RESEARCHER :
DATE:.....

Appendix 5

Consent Form

AUSTRALIAN CATHOLIC UNIVERSITY LIMITED A.CN 050 192660
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PO BOX 247 EVERTON PARK OLD 4053 AUSTRALIA
TELEPHONE (61+7) 38557100 FACSIMILE (61+7) 38557105



AUSTRALIAN CATHOLIC UNIVERSITY

ASSENT OF PARTICIPANTS AGED UNDER 18 YEARS

I 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 the project, realising that I can withdraw at any time without having to give a reason for my decision.

NAME OF PARTICIPANT AGED UNDER 18 :
(block letters)

SIGNATUREDATE.....

SIGNATURE OF SUPERVISOR :

DATE:.....

SIGNATURE OF STUDENT RESEARCHER :

DATE:.....

Appendix 6

Assent Form

AUSTRALIAN CATHOLIC UNIVERSITY LIMITED A.CN 050 192660
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